SERVICE MANUAL

COMMUNICATIONS RECEIVER

IC-R20

Icom Inc.

INTRODUCTION

This service manual describes the latest service information for the **IC-R20** COMMUNICATIONS RECEIVER at the time of publication.
This service manual covers each versions.

MODEL	VERSION	AC adapter
IC-R20	[USA], [EXP-01], [CAN]	BC-149A
	[EUR], [EXP-02]	BC-149D
	[UK], [SEA]	–

To upgrade quality, any electrical or mechanical parts and internal circuits are subject to change without notice or obligation.



DANGER

NEVER connect the receiver to an AC outlet or to an external DC power supply that uses more than 6.3 V. This will ruin the receiver.

DO NOT expose the receiver to rain, snow or any liquids.

DO NOT reverse the polarities of the power supply when connecting the receiver.

DO NOT apply an RF signal of more than 20 dBm (100 mW) to the antenna connector. This could damage the receiver's front end.

ORDERING PARTS

Be sure to include the following four points when ordering replacement parts:

1. 10-digit order numbers
2. Component part number and name
3. Equipment model name and unit name
4. Quantity required

<**SAMPLE ORDER**>

1110003200	S.IC	TA31136FN	IC-R20 RF UNIT	5 pieces
8930062430	Key	2699 Keyboard	IC-R20 Chassis	12 pieces

Addresses are provided on the inside back cover for your convenience.

REPAIR NOTES

1. Make sure a problem is internal before disassembling the receiver.
2. **DO NOT** open the receiver until the receiver is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated turning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the receiver is defective.
6. **READ** the instructions of test equipment thoroughly before connecting equipment to the receiver.

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SECTION 1 SPECIFICATIONS

• IC-R20

■ GENERAL

• Frequency coverage :

Version	Receive coverage (MHz)
[EUR], [UK], [SEA], [CAN] [EXP-01], [EXP-02]	0.150–3304.999
[USA]	0.150–821.999, 851.000–866.999, 896.000–1304.999, 1305.000–3304.999
[FRA]	0.150–29.999, 50.200–51.200, 87.500–108.000, 144.000–146.000 430.000–440.000, 1240.000–1300.000

- Mode : FM, WFM, AM, SSB, CW
- No. of memory channel : 1250 channel (incl. scan edge and auto memory write ch.)
- Frequency stability : ±6 ppm max.
- Tuning steps : 0.01, 0.1, 1, 5, 6.25, 8.33*, 9*, 10, 12.5, 15, 20, 25, 30, 50 and 100 kHz
  *selectable depending on the operating frequency band.
- Antenna Impedance : 50 Ω
- Power supply requirement : 3 × AA(R6) alkaline cells, BP-206 or external power supply (BC-149/A/D, CP-18)
- Polarity : Negative ground
- Current drain (at 3.7 V, backlight is OFF) :
  Rated audio 150 mA typical
  Standby 100 mA typical
  Power saved 35 mA typical
  (Power save ratio is 1 : 4)
- Usable temperature range : –10˚C to +60˚C (–14˚F to +140˚F)
- Dimensions (projections not included) : 60(W) × 142(H) × 34.8(D) mm; 2⅜ (W) × 5 19⁄32 (H) × 1⅜(D) in
- Weight (with antenna and BP-206) : Approx. 320 (g); 11 19⁄32 (oz)
- External SP connector : 3-conductor 3.5(d) mm (⅛") / 8Ω
- Audio output power (at 3.7 V) : 100 mW typical at 10 % distortion with an 8 Ω load
- BP-206 charging time : Approx. 8 hours
- Charging current : 400 mA typical

■ RECEIVER

- Receiver system : Triple super heterodyne and down convertor
- Intermediate frequency : 1st 266.7 and 429.1 MHz
  2nd 19.65 MHz
  3rd 450 kHz
- Sensitivity* :
  Single mode receiving; Except spurious point (Unit; μV)

Frequency (MHz)	FM	WFM	AM	SSB/CW
0.495 – 1.619	—	—	2.2	0.4
1.620 – 4.999	0.56			
5.000 – 29.999	0.4		1.4	0.25
30.000 – 49.999			—	—
50.000 – 53.999				0.25
54.000 – 75.999				—
76.000 – 108.000		1.8		
108.001 – 117.999		—		
118.000 – 135.999			1.4	0.25
136.000 – 146.999			—	
147.000 – 174.999				—
175.000 – 221.999		1.8		
330.000 – 469.999	0.56	—		0.32
470.000 – 769.999		2.5		—
770.000 – 832.999		—		
833.00 – 1304.999	0.71			
1330.000 – 2304.999	5.6			
2330.000 – 2999.999	18			

*FM and WFM is measured at 12 dB SINAD. AM, SSB and CW are measured at 10 dB S/N.

- Squelch Sensitivity : (except spurious points)

Frequency (MHz)	FM	WFM	AM
0.495 – 1.619	—	—	2.2 μV
1.620 – 4.999	0.56 μV		
5.000 – 29.999	0.4 μV		1.4 μV
30.000 – 75.999			—
76.000 – 108.000		18 μV	
108.001 – 117.999		—	
118.000 – 135.999			1.4 μV
136.000 – 174.999			—
175.000 – 221.999		18 μV	
330.000 – 469.999	0.56 μV	—	
470.000 – 769.999		18 μV	
770.000 – 832.999		—	
833.000 – 1304.999	0.71 μV		
1330.000 – 2304.999	5.6 μV		
2333.000 – 2999.999	18 μV		

- Selectivity :
  SSB/CW More than 1.8 kHz / –6 dB
  AM / FM More than 12 kHz / –6 dB
  Less than 30 kHz / –60 dB
  WFM More than 150 kHz / –6 dB

All stated specifications are subject to change without notice or obligation.

• BC-156

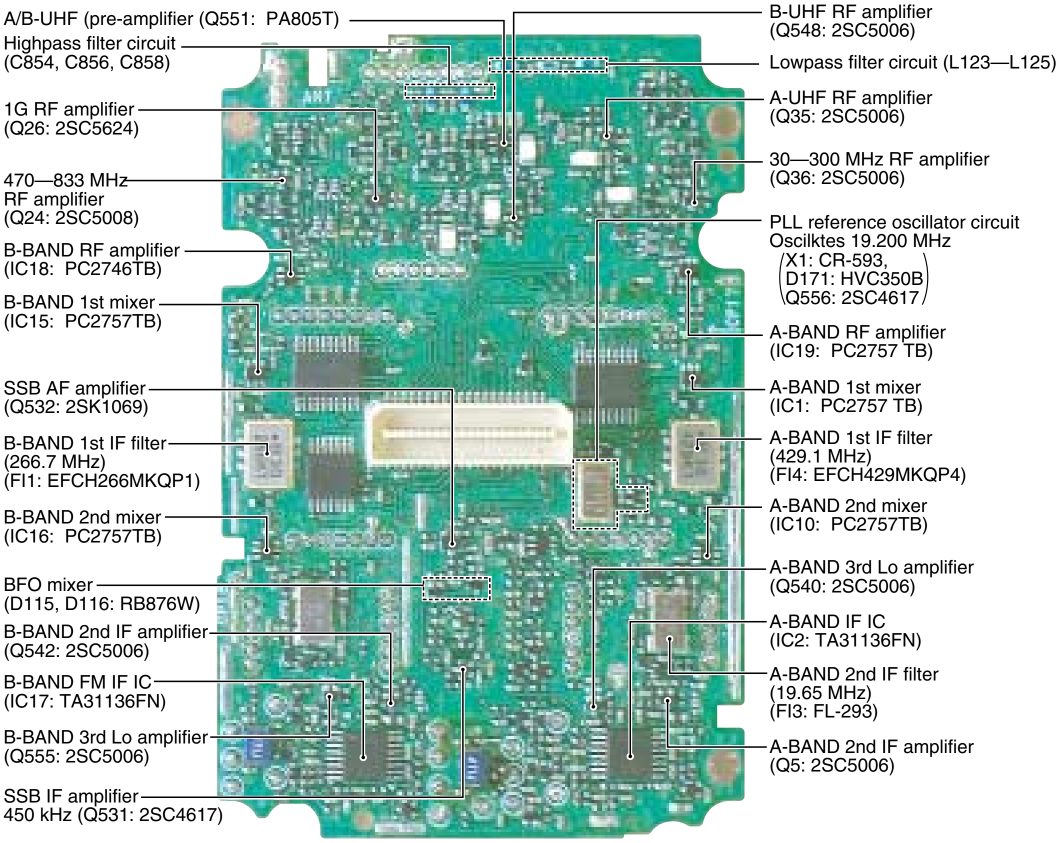
- Input voltage : 8.0–16.0 V
- Charging current : 0.96–1.44 A (Rapid charging)
- Usable temperature : 0˚C to +35˚C (+32˚F to +95˚F)
- Timer device : 192–288 minutes (Rapid charging)
  12–18 minutes (Reserve charging)
- Protect function :

FUNCTION	BP-206 CONDITION	BC-156 ACTION	LED CONDITION
Over discharge	Becomes 1.5 V	Charging stop	Blinking orange
Over charge	Becomes 4.5 V	Charging stop	Blinking orange
Overcurrent	Shorten BP-206 and GND	Charging stop	Blinking orange
Full charge	Becomes 4.2 V	Charging stop	Lighting green
Normal charging	Becomes 3.5 V	Charging	Lighting orange

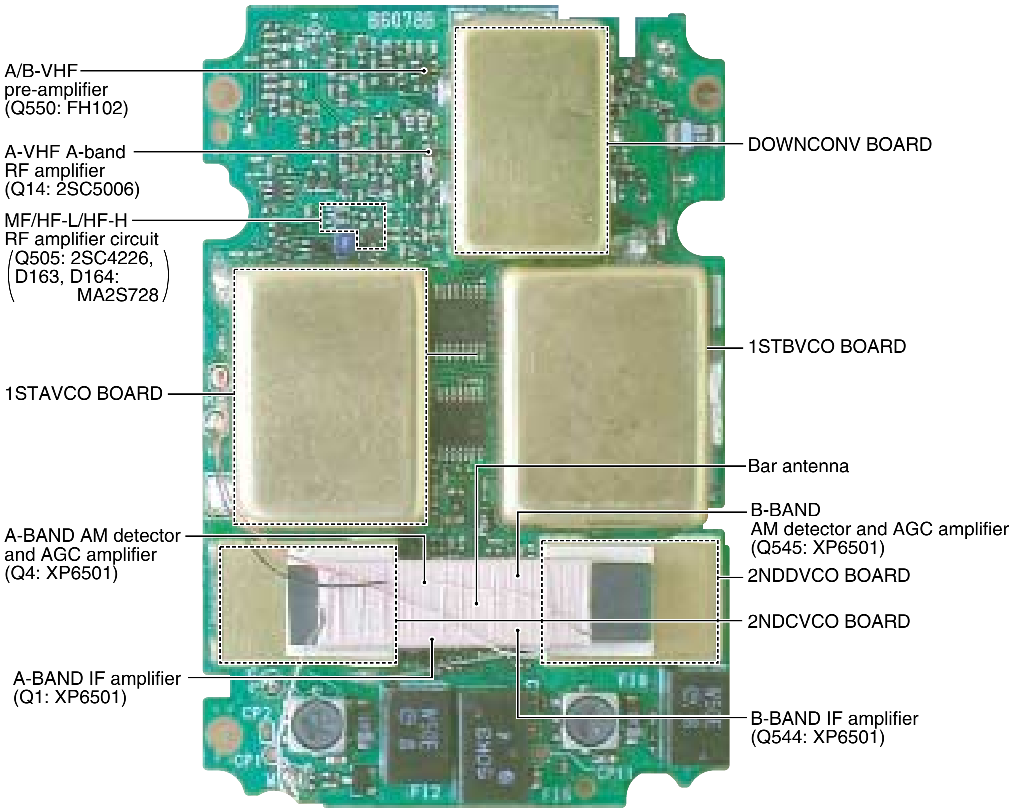
SECTION 2 INSIDE VIEWS

2-1 RF UNIT

• Top view

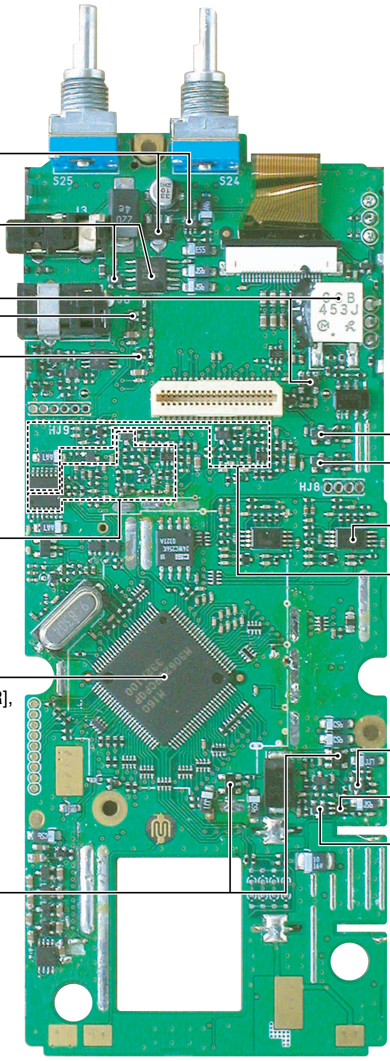


• Bottom view

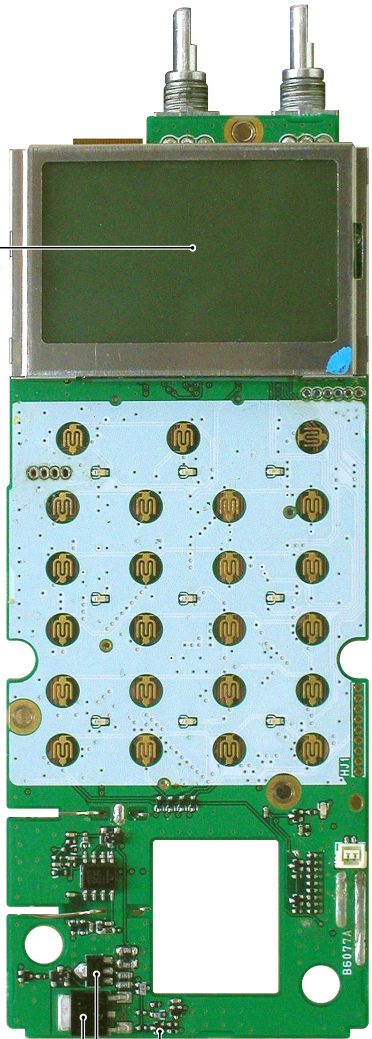


2-2 LOGIC UNIT

• Top view

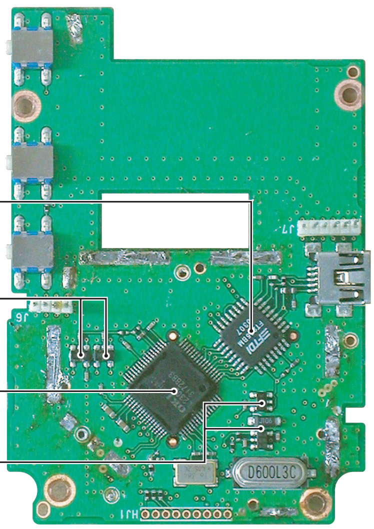


• Bottom view

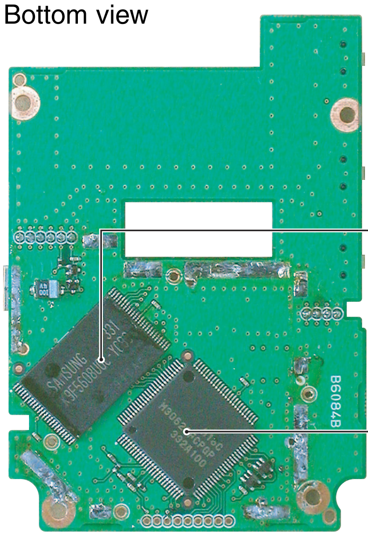


2-3 REC UNIT

• Top view



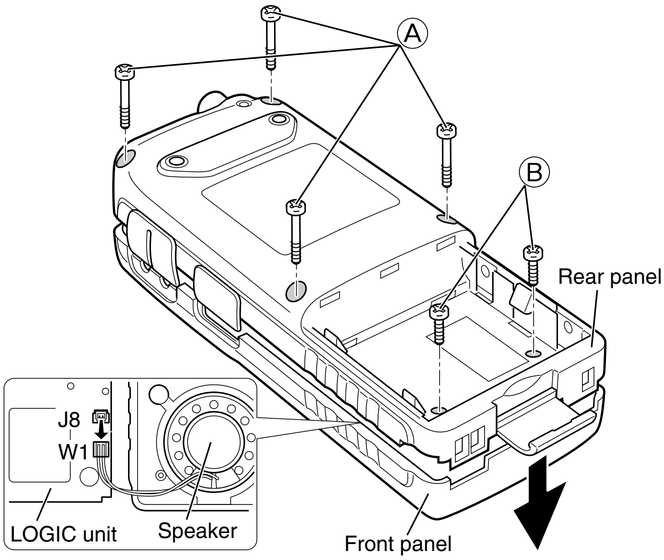
• Bottom view



SECTION 3 DISASSEMBLY INSTRUCTIONS

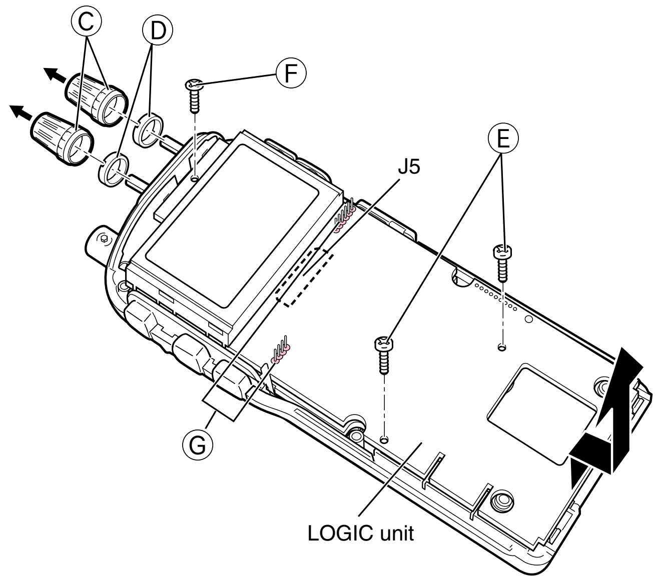
(1) REMOVING THE REAR PANEL

① Unscrew 4 screws, Ⓐ (2 × 115 mm, black).
② Unscrew 2 screws, Ⓑ (2 × 8 mm, black).
③ Unplug W1 and J8 (LOGIC unit) to separate the front and the rear panels.



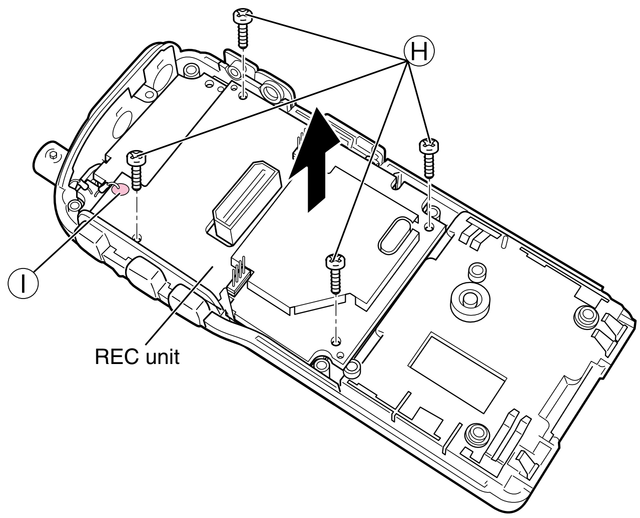
(2) REMOVING THE LOGIC UNIT

① Remove 2 knobs, Ⓒ, and unscrew 2 nuts, Ⓓ.
② Unscrew 2 flat-head screws, Ⓔ (2 × 4 mm, silver), and 1 pan-head screw, Ⓕ (2 × 4 mm, black).
③ Unsolder 10 points, Ⓖ.
④ Unplug J5 (bottom side of LOGIC unit) and J1 (RF unit) to separate the LOGIC unit.
⑤ Remove the LOGIC unit in the direction of the arrow.



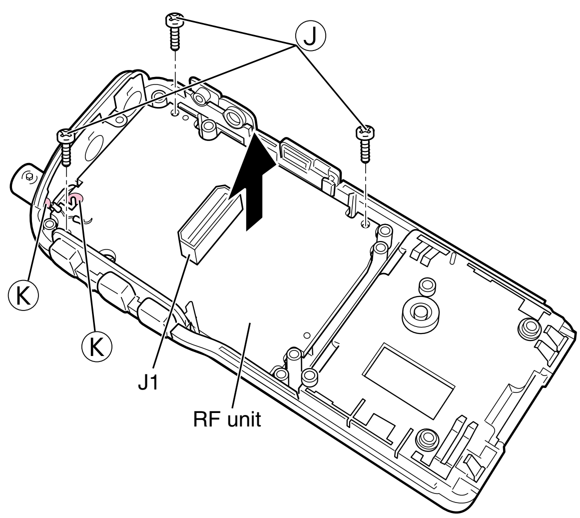
(3) REMOVING THE REC UNIT

① Unscrew 4 flat-head screws, Ⓗ (2 × 4 mm, silver).
② Unsolder 1 point, Ⓘ.
③ Remove the REC unit in the direction of the arrow.



(4) REMOVING THE RF UNIT

① Unscrew 3 flat-head screws, Ⓙ (2 × 4 mm, silver).
② Unsolder 2 points, Ⓚ.
③ Remove the RF unit in the direction of the arrow.



SECTION 4 CIRCUIT DESCRIPTION

4-1 RECEIVER CIRCUITS

4-1-1 BAND SWITCHING CIRCUIT (RF UNIT)

The RF signals from the antenna connector pass through the limiter (D68) and an attenuator* (D69). The signals are then applied to the antenna switching circuit (D3, D11, D13, D65, D66 and D73–D75).
*Above 2 GHz RF signals do not pass through the attenuator.

4-1-2 RF CIRCUIT (RF UNIT)

The RF circuit amplifies the received signals within the range of frequency coverage and filters out-of-band signals.

• A-BAND CIRCUIT

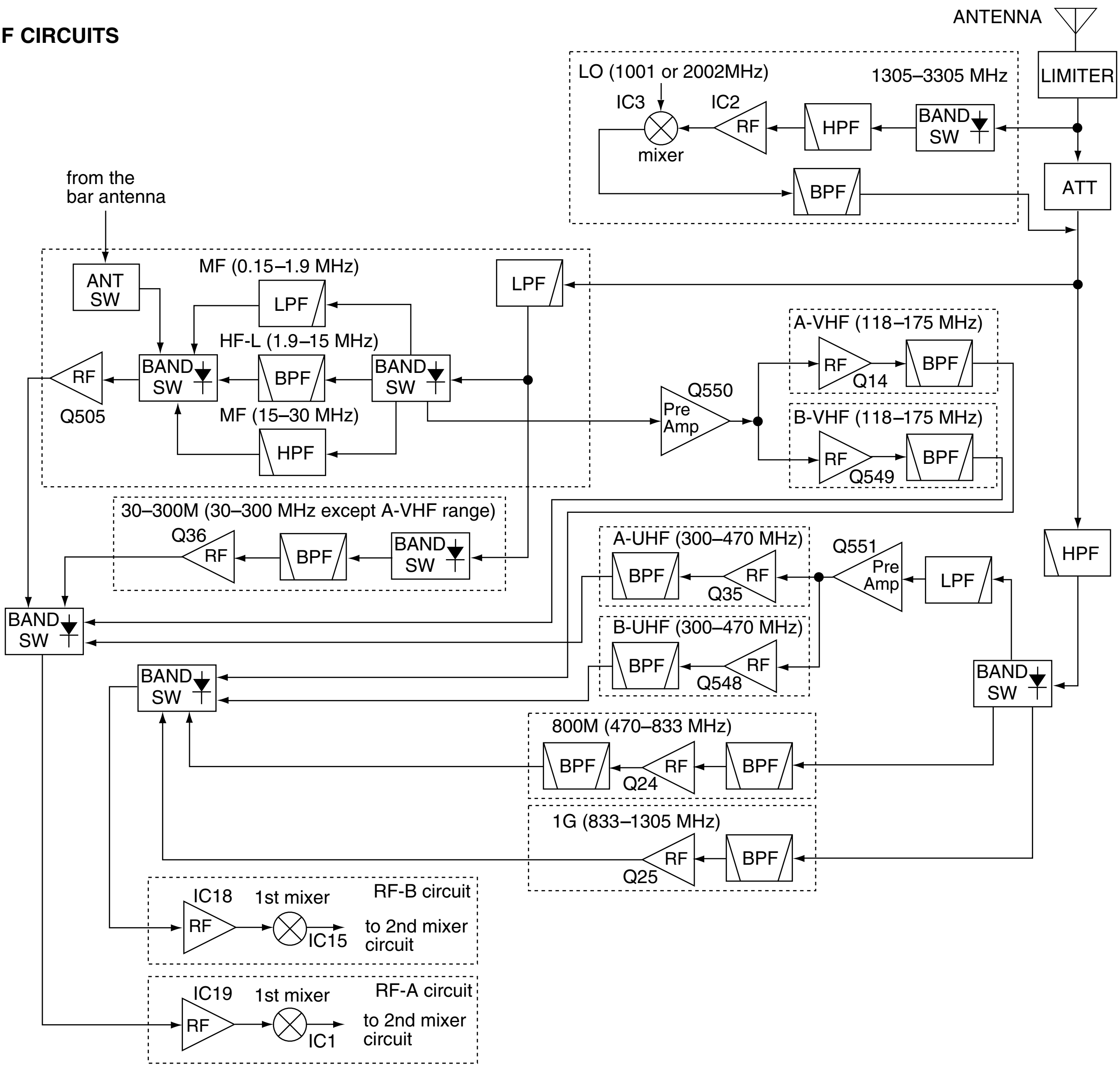
(1) MF (above 0.15 MHz, below 1.9 MHz) signals

RF signals (0.15–1.9 MHz) from an attenuator (D69) pass through the low-pass filter (L123–L125 and C851–C853), band switch (D66) and another low-pass filter (L88, L89, C533–C535, C657, C658). The filtered signals pass through another band switch (D67), and are then amplified at an RF amplifier (Q505). The amplified signals are applied to the next band switch (D72).

(2) HF-L (above 1.9 MHz, below 15 MHz) signals

RF signals (1.9–15 MHz) from an attenuator (D69) pass through the low-pass filter (L123–L125 and C851–C853), band switch (D65) and bandpass filter (L85–L87, L91, C522–C531 and C891). The filtered signals pass through another band switch (D70), and are then amplified at an RF amplifier (Q505). The amplified signals are applied to the next band switch (D72).

• RF CIRCUITS



(3) HF-H (above 15 MHz, below 30 MHz) signals
RF signals (15–30 MHz) from an attenuator (D69) pass through the low-pass filter (L123–L125 and C851–C853), band switch (D73) and bandpass filter (L81–L84 and C511–C520). The filtered signals pass through another band switch (D64), and are then amplified at an RF amplifier (Q505). The amplified signals are applied to the next band switch (D72).

(4) A-VHF (above 118 MHz, below 175 MHz) signals
RF signals (118–175 MHz) from an attenuator (D69) pass through the low-pass filter (L123–L125 and C851–C853), band switch (D74), and are then applied to the pre-amplifier (Q550) which is controlled by "A_VHF3V" signal via the D148. The signals are amplified at the RF amplifier (Q14), and pass through the bandpass filter (D1, D2, L1 and C14–C16). The filtered signals are applied to the next band switch (D25).

(5) 30–300M (above 30 MHz, below 300 MHz and except A-VHF signals) signals
RF signals (118–175 MHz) from an attenuator (D69) pass through the low-pass filter (L123–L125 and C851–C853) and band switch (D75). The filtered signals pass through the bandpass filter (L9, L10, L92, L133, C40–C43, C665 and C666), and are then amplified at an RF amplifier (Q36). The amplified signals are applied to the next band switch (D34).

(6) A-UHF (above 300 MHz, below 470 MHz) signals
RF signals (300–470 MHz) from an attenuator (D69) pass through the high-pass filter (L126, L127 and C854–C858) and band switch (D3). The filtered signals pass through the low-pass filter (L3, L4, C22, C23 and C218), and are then amplified at the pre-amplifier (Q551) which is controlled by "A_UHF3V" signal via the D150. The amplified signals are applied to the RF amplifier (Q35), and then pass through the bandpass filter (D4, D5, L60, C58 and C59). The signals are applied to the next band switch (D29).

• B-BAND CIRCUIT

(1) B-VHF (above 118 MHz, below 175 MHz) signals
RF signals (118–175 MHz) from an attenuator (D69) pass through the low-pass filter (L123–L125 and C851–C853), band switch (D74), and are then applied to the pre-amplifier (Q550) which is controlled by "B_VHF3V" signal via the D149. The signals are amplified at the RF amplifier (Q549), and pass through the bandpass filter (D145, D146, L120, C833 and C834). The filtered signals are applied to the next band switch (D147).

(2) B-UHF (above 330 MHz, below 470 MHz) signals
RF signals (330–470 MHz) from an attenuator (D69) pass through the high-pass filter (L126, L127 and C854–C858) and band switch (D3). The filtered signals pass through the low-pass filter (L3, L4, C22 and C23), and are then amplified at the pre-amplifier (Q551) which is controlled by "A_VHF3V" signal via the D151. The amplified signals are applied to the RF amplifier (Q548), and then pass through the bandpass filter (D141, D142, L113, C814 and C816). The signals are applied to the next band switch (D143).

(3) 800M (above 470 MHz, below 833 MHz) signals
RF signals (470–833 MHz) from an attenuator (D69) pass through the high-pass filter (L126, L127 and C854–C858) and band switch (D11). The filtered signals pass through the bandpass filter (D173, D174, L129 and L130), and are then amplified at the RF amplifier (Q24). The amplified signals pass through the bandpass filter (D175, D176 and L132). The signals are applied to the next band switch (D32).

(4) 1G (above 833 MHz, below 1305 MHz) signals
RF signals (833–1305 MHz) from an attenuator (D69) pass through the high-pass filter (L126, L127 and C854–C858) and band switch (D13). The filtered signals pass through the bandpass filter (L11–L13, L43, C5, C45–C51), and are then amplified at the RF amplifier (Q26). The signals are applied to the next band switch (D36).

4-1-3 DOWN CONVERTER CIRCUIT (RF UNIT AND DOWNCONV BOARD)

The down converter circuit converts the signals within 1305–3305 MHz into 0.15 MHz to 1305 MHz signals.
The converted frequencies can calculate as follow.
F(x)=X–1001 (X is above 1305 MHz, below 2306 MHz)
F(x)=X–2002 (X is above 2306 MHz, below 3305 MHz)
NOTE: F(x) is converted frequency
X is receiving frequency
(Calculate example)
- Convert into 599 MHz when receiving 1600 MHz.
- Convert into 798 MHz when receiving 2800 MHz.

The RF signals from the limiter (D68) are applied to the DOWNCONV board via the J1, pin 8 on the DOWNCONV board. The signals pass through the band switch (DOWNCONV board; D1) and high-pass filter (DOWNCONV board; L1, L2, C2–C4, C41 and C42), and are then amplified at the RF amplifier (DOWNCONV board; IC2, pin 1). The signals are mixed with 1001 MHz or 2002 MHz LO signal at the mixer (DOWNCONV board; IC3, pin 1). The converted signals output from pin 6, and pass through the band switch (DOWNCONV board; D2).
The converted signals are applied to the RF unit via J1, pin 1 on the board. According to converted frequency, the signals are applied to the each matched RF circuit.

4-1-4 1ST MIXER AND 1ST IF CIRCUITS (RF UNIT)

The 1st mixer circuit converts the received RF signals to a fixed frequency of the 1st IF signal with a PLL output frequency. By changing the PLL frequency, only the desired frequency will pass through the bandpass filters at the next stage of the 1st mixer.

• A-BAND CIRCUIT
The RF signals from the band switch (D25, D29, D34 and D72) are amplified at the RF amplifier (IC19, pins 1, 4), and are mixed with 1st LO signals at the 1st mixer circuit (IC1, pin 1) to produce a 429.1 MHz 1st IF signal. The 1st IF signal is output from pin 6, and passed through the bandpass filter (FI4) to suppress unwanted harmonic components. The filtered 1st IF signal is applied to the 2nd mixer circuit.

The 1st LO signals are generated at the 1st A_VCO circuit and are applied to the 1st mixer (IC1, pin 3) directly.

• B-BAND CIRCUIT
The RF signals from the band switch (D32, D36, D143 and D147) are amplified at the RF amplifier (IC18, pins 1, 4), and are mixed with 1st LO signals at the 1st mixer circuit (IC15, pin 1) to produce a 266.7 MHz 1st IF signal. The 1st IF signal is output from pin 6, and passed through the bandpass filter (FI1) to suppress unwanted harmonic components. The filtered 1st IF signal is applied to the 2nd mixer circuit.

The 1st LO signals are generated at the 1st B_VCO circuit and are applied to the 1st mixer (IC15, pin 3) directly.

4-1-5 2ND MIXER AND 2ND IF CIRCUITS (RF UNIT)

The 2nd mixer circuit converts the 1st IF signal to a 2nd IF signal.

• A-BAND CIRCUIT
The filtered 429.1 MHz 1st IF signal from the bandpass filter (FI4) is mixed with the 2nd LO signal at the 2nd mixer circuit (IC10, pin 1, 6) to produce a 19.65 MHz 2nd IF signal.

In case of AM/CW/SSB/Narrow FM mode, the 2nd IF signal passes through the mode switch (D58), crystal bandpass filter (FI3) and another mode switch (D60).
In case of WFM mode, the 2nd IF signal passes through the mode switch (D59), low-pass filter (C202, C745, R207 and R536) and another mode switch (D61).

The filtered 2nd IF signal is amplified at the 2nd IF amplifier (Q5), and is then applied to the demodulator circuit.

• B-BAND CIRCUIT
The filtered 266.7 MHz 1st IF signal from the bandpass filter (FI1) is mixed with the 2nd LO signal at the 2nd mixer circuit (IC16, pin 1, 6) to produce a 19.65 MHz 2nd IF signal.

In case of AM/CW/SSB/Narrow FM mode, the 2nd IF signal passes through the mode switch (D130), crystal bandpass filter (FI7) and another mode switch (D132).
In case of WFM mode, the 2nd IF signal passes through the mode switch (D131), low-pass filter (C755, C756, R428, R429 and R537) and another mode switch (D133).

The filtered 2nd IF signal is amplified at the 2nd IF amplifier (Q542), and is then applied to the demodulator circuit.

4-1-6 3RD MIXER AND DEMODULATOR CIRCUITS (RF UNIT)

The 3rd mixer circuit converts the 2nd IF signal to a 3rd IF signal. The demodulator circuit converts the 3rd IF signal into AF signals.

• A-BAND CIRCUIT
The 19.65 MHz 2nd IF signal from the 2nd IF amplifier (Q5) is applied to the 3rd mixer section of the FM IF IC (IC2, pin 16) and is then mixed with the 3rd LO signal for conversion into a 450 kHz 3rd IF signal.

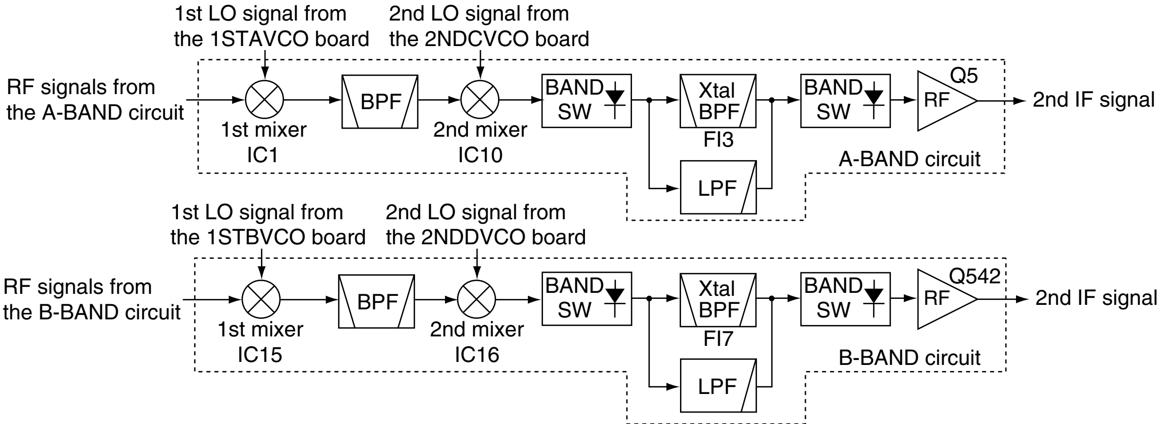
IC2 contains the 3rd mixer, limiter amplifier, quadrature detector and S-meter detector, etc. A frequency from the PLL reference oscillator is used for the 3rd LO signal (19.20 MHz).

(1) FM MODE
The 3rd IF signal is output from the FM IF IC (IC2, pin 3), and passes through the mode switch (D109) and ceramic bandpass filter (FI2). The filtered signal passes through the mode switch (D112), and is then fed back and amplified at the limiter amplifier section (pin 5). The signal is demodulated to AF signals at the quadrature detector section (pins 10, 11) and detector coil (L21). The demodulated AF signals are output from pin 9 and are applied to the AF switch (IC12, pin 11) via the “A_DETFM” line, and are then applied to the AF circuit (LOGIC unit) as “A_DET” signal.

(2) WFM MODE
The 3rd IF signal is output from the FM IF IC (IC2, pin 3), and passes through the mode switch (D108) and low-pass filter (L99, C686 and C687). The filtered signal passes through the mode switch (D111), and is then fed back to the limiter amplifier section (pin 5). The amplified signal is demodulated at the quadrature detector section (pins 10 and 11) and detector coil (L21). The AF signals are output from pin 9 and are applied to the AF switch (IC12, pin 11) via the “A_DETFM” line, and are then applied to the AF circuit (LOGIC unit) as “A_DET” signal.

By connecting R55 to R54 in parallel, the output characteristics of pin 12, “RSSI”, change gradually. Therefore, the FM IF IC can detect WFM components.

• 1ST, 2ND MIXER AND 2ND IF CIRCUITS



(3) AM MODE

The 3rd IF signal is output from the FM IF IC (IC2, pin 3), and passes through the mode switch (D109) and ceramic bandpass filter (FI2). The filtered signal passes through the mode switch (D112), and is then applied to the IF amplifier (Q531). The amplified signal is demodulated at the AM detector (Q4). The AF signals pass through the ANL circuit (D114), and are then applied to the AF switch (IC12, pin 4) via the “A_DETAM” line, and are then applied to the AF circuit (LOGIC unit) as “A_DET” signal.

(4) SSB/CW MODES

The 3rd IF signal is output from the FM IF IC (IC2, pin 3), and passes through the mode switch (D110) and ceramic bandpass filter (FI6). The filtered signal passes through the mode switch (D113), and is then applied to the IF amplifier (Q531). The amplified signal is mixed with BFO signal from the LOGIC unit at the mixer (D115 and D116) to demodulate to AF signals. The AF signals are applied to the SSB AF amplifier (Q532), and are then applied to the AF switch (IC12, pin 1) via the “A_DETSSB” line, and are then applied to the AF circuit (LOGIC unit) as “A_DET” signal.

• B-BAND CIRCUIT

The 19.65 MHz 2nd IF signal from the 2nd IF amplifier (Q542) is applied to the 3rd mixer section of the FM IF IC (IC17, pin 16) and is then mixed with the 3rd LO signal for conversion into a 450 kHz 3rd IF signal.

IC17 contains the 3rd mixer, limiter amplifier, quadrature detector and S-meter detector, etc. A frequency from the PLL reference oscillator is used for the 3rd LO signal (19.20 MHz).

(1) FM MODE

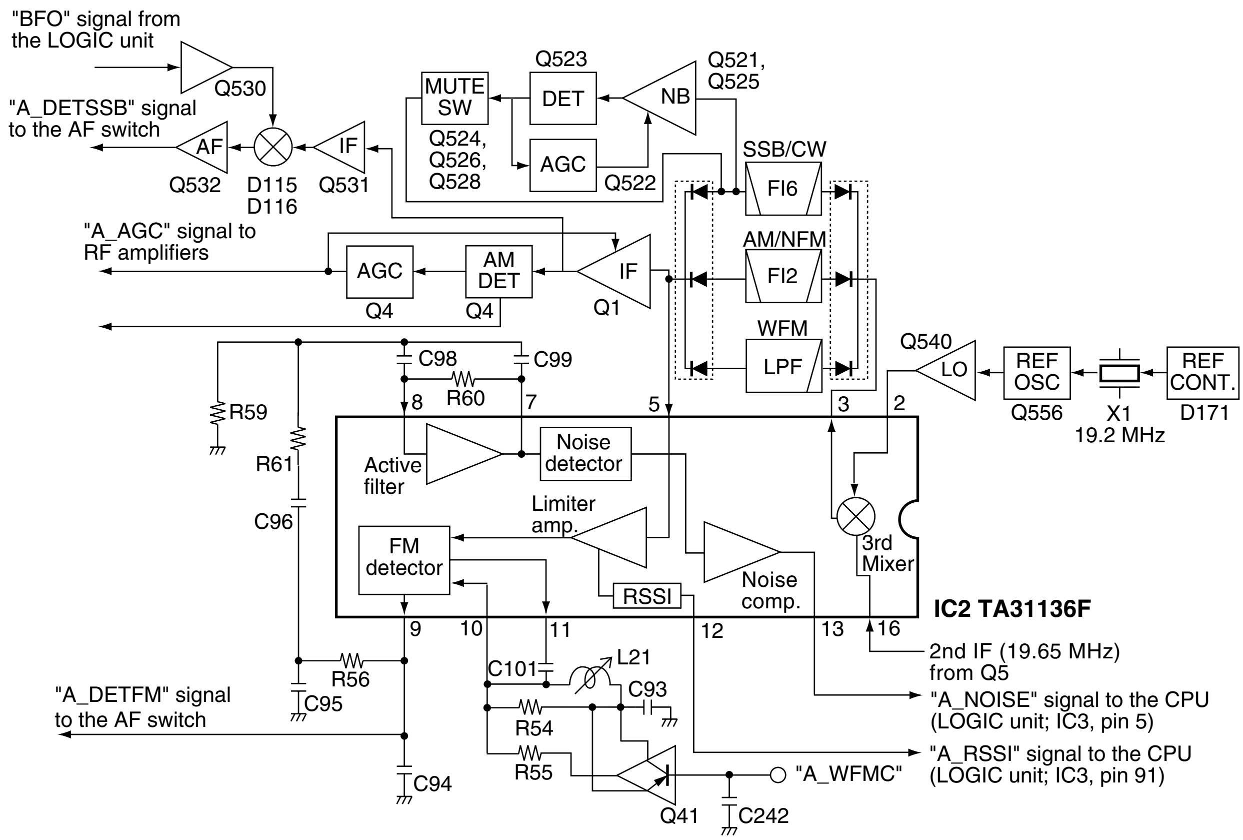
The 3rd IF signal is output from the FM IF IC (IC17, pin 3), and passes through the mode switch (D134) and ceramic bandpass filter (FI8). The filtered signal passes through the mode switch (D136), and is then fed back and amplified at the limiter amplifier section (pin 5). The signal is demodulated AF signals at the quadrature detector section (pins 10, 11) and detector coil (L105). The demodulated AF signals are output from pin 9 and are applied to the AF switch (IC21, pin 1) via the “DET_OUT” line, and are then applied to the AF circuit (LOGIC unit) as “B_DET” signal.

(2) WFM MODE

The 3rd IF signal is output from the FM IF IC (IC17, pin 3), and passes through the mode switch (D135) and low-pass filter (L106, C781 and C782). The filtered signal passes through the mode switch (D137), and is then fed back to the limiter amplifier section (pin 5). The amplified signal is demodulated at the quadrature detector section (pins 10 and 11) and detector coil (L105). The AF signals are output from pin 9 and are applied to the AF switch (IC21, pin 1) via the “DET_OUT” line, and are then applied to the AF circuit (LOGIC unit) as “B_DET” signal.

By connecting R436 to R437 in parallel, the output characteristics of pin 12, “RSSI”, change gradually. Therefore, the FM IF IC can detect WFM components.

• A-BAND 3RD MIXER AND DEMODULATOR CIRCUITS



(3) AM MODE
The 3rd IF signal is output from the FM IF IC (IC17, pin 3), and passes through the mode switch (D134) and ceramic bandpass filter (FI8). The filtered signal passes through the mode switch (D136), and is then applied to the IF amplifier (Q544). The amplified signal is demodulated at the AM detector (Q545). The AF signals pass through the ANL circuit (D139), and are then applied to the AF switch (IC21, pin 4) via the “AM_DET” line, and are then applied to the AF circuit (LOGIC unit) as “B_DET” signal.

4-1-7 AF AMPLIFIER CIRCUIT (LOGIC UNIT)
The AF amplifier circuit amplifies the demodulated AF signals to drive a speaker.

• A-BAND CIRCUIT
While in FM mode, AF signals from the demodulator circuit (RF unit) pass through the AF filter (Q25), and are then amplified at the AF amplifier (Q23).

While in WFM/AM/SSB/CW modes, AF signals from the demodulator circuit (RF unit) bypass the AF filter via the AF filter bypass switch (Q26), and are then amplified at the AF amplifier (Q23).

The signals are applied to the electronics volume (IC7, pin 6) to control volume level. The signals output from pin 5, and are applied to the pre-amplifier (Q12). The signals are amplified at the AF amplifier (IC5, pin 1), and then output from pin 6. The signals are applied to the internal speaker which is connected with J8 via the external speaker jack (J3).

• B-BAND CIRCUIT
While in FM mode, AF signals from the demodulator circuit (RF unit) pass through the AF filter (Q24), and are then amplified at the AF amplifier (Q22).

While in WFM/AM modes, AF signals from the demodulator circuit (RF unit) bypass the AF filter via the AF filter bypass switch (Q27), and are then amplified at the AF amplifier (Q22).

The signals are applied to the electronics volume (IC7, pin 11) to control volume level after passing through the mute switch (Q19). The signals output from pin 12, and are applied to the pre-amplifier (Q16). The signals are amplified at the AF amplifier (IC5, pin 1), and then output from pin 6. The signals are applied to the internal speaker which is connected with J8 via the external speaker jack (J3).

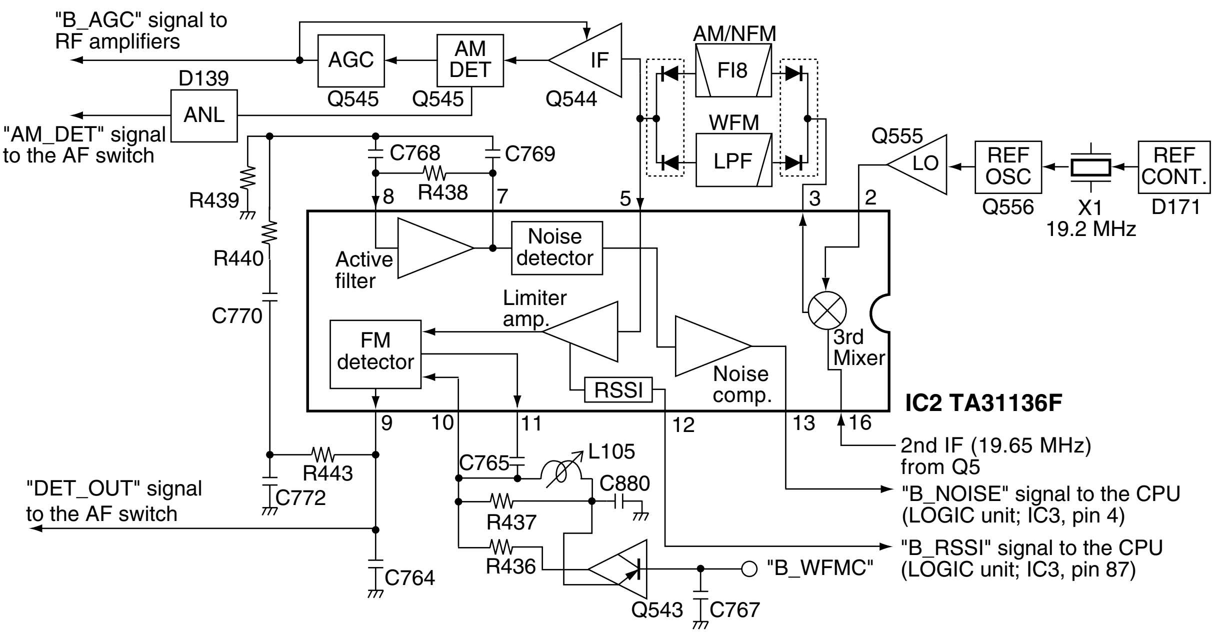
The electronic volume control circuit controls AF gain, therefore, the AF output level is according to the [VOL] setting and also the squelch conditions.

4-1-8 SQUELCH CIRCUIT (LOGIC AND RF UNITS)
• NOISE SQUELCH
The noise squelch circuit cuts out AF signals when no RF signals are received. By detecting noise components in the AF signals, the squelch circuit switches the AF mute switch.

A portion of the “A_NOISE” signals from the FM IF IC (RF unit; IC2, pin 13) are applied to the CPU (LOGIC unit; IC3, pin 5). The CPU analyzes the noise condition and outputs the “AFON” signal (from pin 17) to the AF amplifier’s controller (LOGIC unit; Q7).

• TONE SQUELCH
The tone squelch circuit detects AF signals and opens the squelch only when receiving a signal containing a matching subaudible tone (CTCSS). When tone squelch is in use, and a signal with a mismatched or no subaudible tone is received, the tone squelch circuit mutes the AF signals even when noise squelch is open.

• B-BAND 3RD MIXER AND DEMODULATOR CIRCUITS



(1) A-BAND CIRCUIT
A portion of the AF signals from the FM IF IC (RF unit; IC2, pin 9) passes through the low-pass filter (LOGIC unit; C161, C164, R169 and R175) via the "A_DET" line to remove AF (voice) signals and is applied to the CTCSS decoder inside the CPU (LOGIC unit; IC3, pin 89) via the "A_CTONE" line to control the AF mute switch.

(2) B-BAND CIRCUIT
A portion of the AF signals from the FM IF IC (RF unit; IC17, pin 9) passes through the low-pass filter (LOGIC unit; C160, C163, R168 and R174) via the "B_DET" line to remove AF (voice) signals and is applied to the CTCSS decoder inside the CPU (LOGIC unit; IC3, pin 90) via the "B_CTONE" line to control the AF mute switch.

4-1-9 AGC CIRCUIT (RF UNIT)
The AGC (Automatic Gain Control) circuit reduces IF and RF amplifiers gain to keep the audio output at a constant level. The receiver gain is determined by the voltage on the AGC line (A-BAND circuit is Q4's collector, B-BAND circuit is Q545's collector).

• A-BAND CIRCUIT
A part of the 3rd IF signal from the mode switch (D111–D113) is amplified at the IF amplifier (Q1), and is then applied to the AM detector. (Q4, pin 5). The signal is output from pin 1, and is then applied to the AGC circuit of the same one (pin 3). The signal is output from pin 4 as "A-AGC" signal, and is then applied to the 3rd IF amplifier (Q1), 2nd IF amplifier (Q5) and RF amplifiers (Q14, Q35, Q36 and Q505).

• B-BAND CIRCUIT
A part of the 3rd IF signal from the mode switch (D136 and D137) is amplified at the IF amplifier (Q544), and is then applied to the AM detector. (Q545, pin 5). The signal is output from pin 1, and is then applied to the AGC circuit of the same one (pin 3). The signal is output from pin 4 as "B-AGC" signal, and is then applied to the 3rd IF amplifier (Q544), 2nd IF amplifier (Q542) and RF amplifiers (Q24, Q25, Q548 and Q549).

The A-AGC or B-AGC voltage is used for the the bias voltage of the IF and RF amplifiers. When receiving strong signals, the detected voltage increases and the AGC voltage decreases. Therefore, the receiver obtain stable receiver gain.

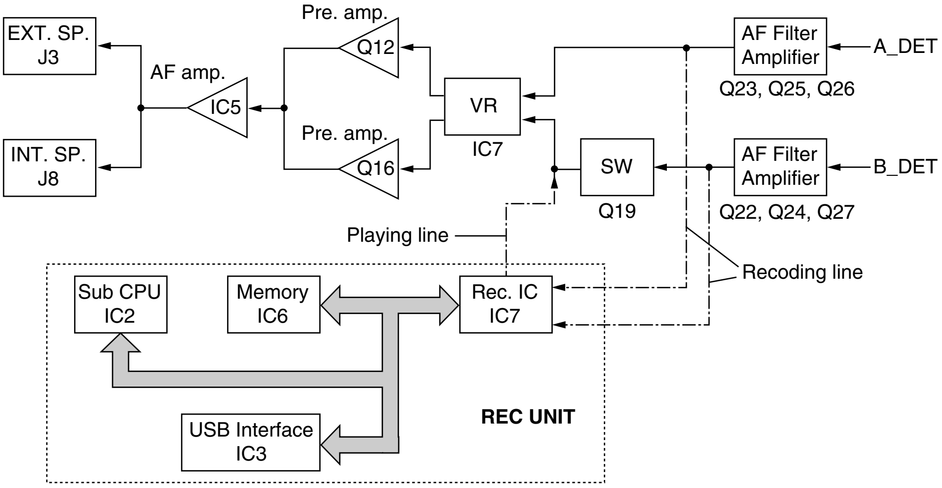
4-1-10 IC RECORDER CIRCUIT (LOGIC UNIT)
The IC RECORDER circuit is composed of RECORDER IC (IC7), sub CPU (IC2), flash memory (IC6), USB interface (IC3), etc.

(1) IN CASE OF RECORDING
• A-BAND CIRCUIT
The AF signals from the AF amplifier (Q23) are applied to the REC board via the HJ8, pin 2 as "A_AIN" signal. The signals are applied to the RECORDING IC (IC7, pin 25) to compress the voice signals, and are then converted to digital signals. The signals are applied to the sub CPU (IC2), and are then stored in the flash memory (IC6).

• B-BAND CIRCUIT
The AF signals from the AF amplifier (Q22) are applied to the REC board via the HJ8, pin 3 as "B_AIN" signal. The signals pass through the AF mute switch (IC8, pins 1 and 2), and are then applied to the RECORDING IC (IC7, pin 20) to compress the voice signals, and are then converted to digital signals. The signals are applied to the sub CPU (IC2), and are then stored in the flash memory (IC6).

(2) IN CASE OF PLAYBACK
The stored RECORDING data in the flash memory (IC6) are applied to the sub CPU (IC2), and are then applied to the RECORDING IC (IC7). The signals are converted to analog signals, and are then expanded into the AF voice signals. The AF signals output from RECORDING IC (IC7, pin 25). The signals are applied to the LOGIC unit via the J6, pin 3 as "AOUT" signal, and are then applied to the electronics volume (IC7, pin 11) to control volume level. The signals output from pin 12, and are applied to the pre-amplifier (Q16). The signals are amplified at the AF amplifier (IC5, pin 1), and then output from pin 6. The signals are applied to the internal speaker which is connected with J8 via the external speaker jack (J3).

• AF AMPLIFIER AND IC RECORDER CIRCUITS



4-2 PLL CIRCUITS

4-2-1 PLL CIRCUIT

A PLL circuit provides stable oscillation of the 1st LO frequencies. The PLL circuit compares the phase of the divided VCO frequency to the reference frequency. The PLL output frequency is controlled by the divided ratio (N-data) of a programmable divider.

• A-BAND CIRCUIT (1STAVCO BOARD)

An oscillated signal from one of the 1st VCO circuits (Q1–Q3, D1–D4) passes through the LO switch (D7–D19) and buffer amplifiers (IC2, Q8). The amplified signal is applied to the PLL IC (IC3, pin 11) and is prescaled in the PLL IC based on the divided ratio (N-data). The PLL IC detects the out-of-step phase using the reference frequency and outputs it from pin 5. The output signal is passed through the loop filter (Q6, Q7), and is then applied to the one of the 1st VCO circuits as the lock voltage.

• B-BAND CIRCUIT (1STBVCO BOARD)

An oscillated signal from one of the 1st VCO circuits (Q1–Q5, D1–D5) passes through the LO switch (D7–D10) and buffer amplifiers (IC2, Q8). The amplified signal is applied to the PLL IC (IC3, pin 11) and is prescaled in the PLL IC based on the divided ratio (N-data). The PLL IC detects the out-of-step phase using the reference frequency and outputs it from pin 5. The output signal is passed through the loop filter (Q6, Q7), and is then applied to the one of the 1st VCO circuits as the lock voltage.

• DOWN CONVERTER PLL CIRCUIT (DOWNCONV BOARD)

An oscillated signal from the VCO circuit (Q1, D3) is amplified at the buffer amplifier (Q2). The amplified signal is applied to the PLL IC (IC4, pin 8) and is prescaled in the PLL IC based on the divided ratio (N-data). The PLL IC detects the out-of-step phase using the reference frequency and outputs it from pin 5. The output signal is passed through the low-pass filter (L6, C21, C22 and C40), and is then applied to the one of the 1st VCO circuits as the lock voltage.

4-2-2 REFERENCE OSCILLATOR CIRCUIT (RF UNIT)

The reference oscillator circuit (X1, Q556, D171) generates a 19.2 MHz reference frequency which is stabilized within the temperature range –10˚C (+14˚F) to +60˚C (+140˚F). The reference frequency is applied to the PLL ICs (refer to the list below in details) and the FM IF ICs (IC2, pin 2 for A-BAND circuit: IC17, pin 2 for B-BAND circuit) via the LO amplifiers (Q540 for A-BAND circuit; Q555 for B-BAND circuit).

BOARD NAME	PLL IC	INPUT	OUTPUT
1STAVCO	IC3	pin 19	pin 5
1STBVCO	IC3	pin 19	pin 5
2NDCVCO	IC1	pin 1	pin 6
2NDDVCO	IC1	pin 1	pin 6
DOWNCONV	IC4	pin 1	pin 5

4-2-3 1ST VCO CIRCUITS (1STAVCO AND 1STBVCO BOARDS)

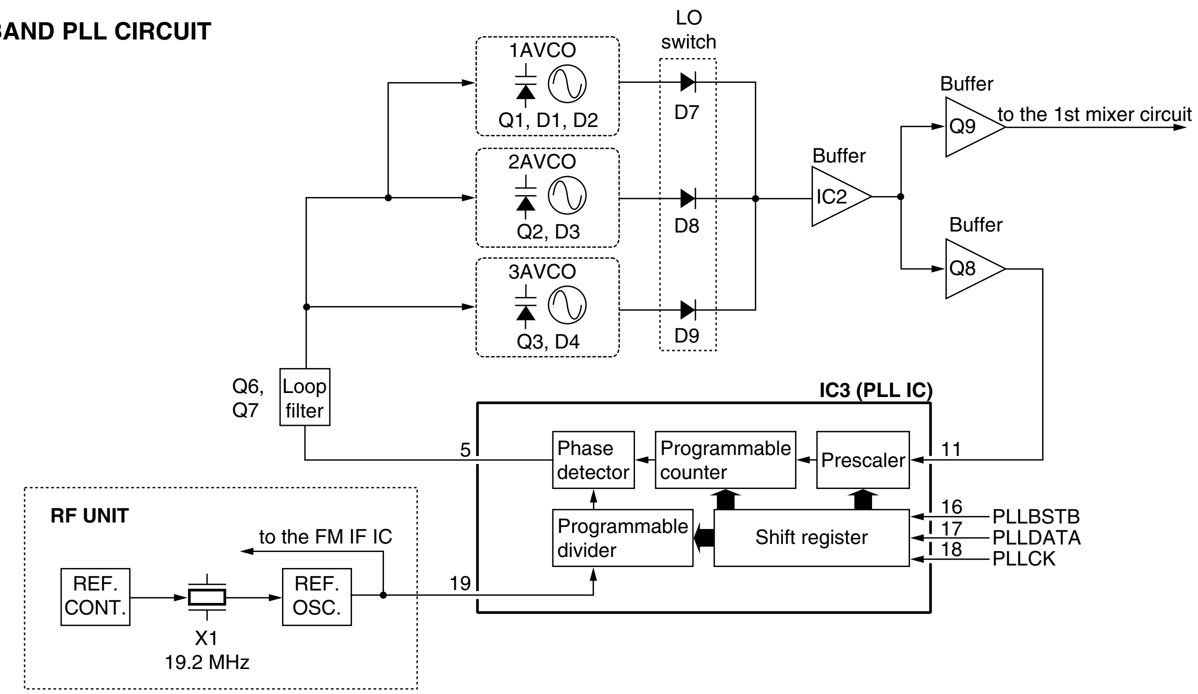
• A-BAND CIRCUIT (1STAVCO BOARD)

The oscillated signal at 1st A-VCO circuits is applied to the buffer amplifiers (IC2) via one of the LO switches (D7–D9). The amplified signal is applied to the 1st mixer circuit (RF unit; IC1, pin 3) via the LO amplifier (Q9).

The 1st A-VCO circuit is composed of 1AVCO, 2AVCO and 3AVCO. Components and osillating frequences of each circuits are as follow list.

1st A-VCO	Components	Oscillating freq. (MHz)
1AVCO	Q1, D1 and D2	849.1–899.0999
2AVCO	Q2 and D3	604.1–849.0999
3AVCO	Q3 and D4	429.25–604.0999

• A-BAND PLL CIRCUIT



A portion of the signal from the buffer amplifier (IC2) is amplified at the buffer amplifier (Q8) and is then fed back to the PLL IC (IC3, pin 11) as the comparison signal.

• B-BAND CIRCUIT (1STBVCO BOARD)

The oscillated signal at 1st B-VCO circuits is applied to the buffer amplifiers (IC2) via one of the LO switches (D7–D10). The amplified signal is applied to the 1st mixer circuit (RF unit; IC15, pin 3) via the LO amplifier (Q9). Components and osillating frequences of each circuits are as follow list.

1st B-VCO	Components	Oscillating freq. (MHz)
1BVCO	Q1, D1 and D2	863.3–1099.6999
2BVCO	Q2 and D3	683.3–866.6999
3BVCO	Q3 and D4	566.3–686.6999
4BVCO	Q4, Q5 and D5	384.7–441.6999

A portion of the signal from the buffer amplifier (IC2) is amplified at the buffer amplifier (Q8) and is then fed back to the PLL IC (IC3, pin 11) as the comparison signal.

4-2-4 2ND VCO CIRCUITS (2NDCVCO AND 2NDDVCO BOARDS)

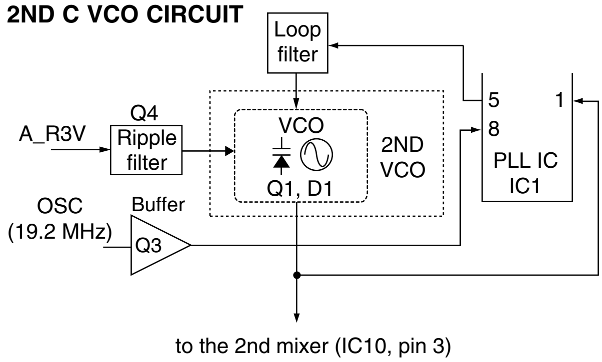
The 2nd VCO circuit generates the 2nd LO frequencies, and the signals are applied to the 2nd mixer circuit.

• A-BAND CIRCUIT (2NDCVCO BOARD)

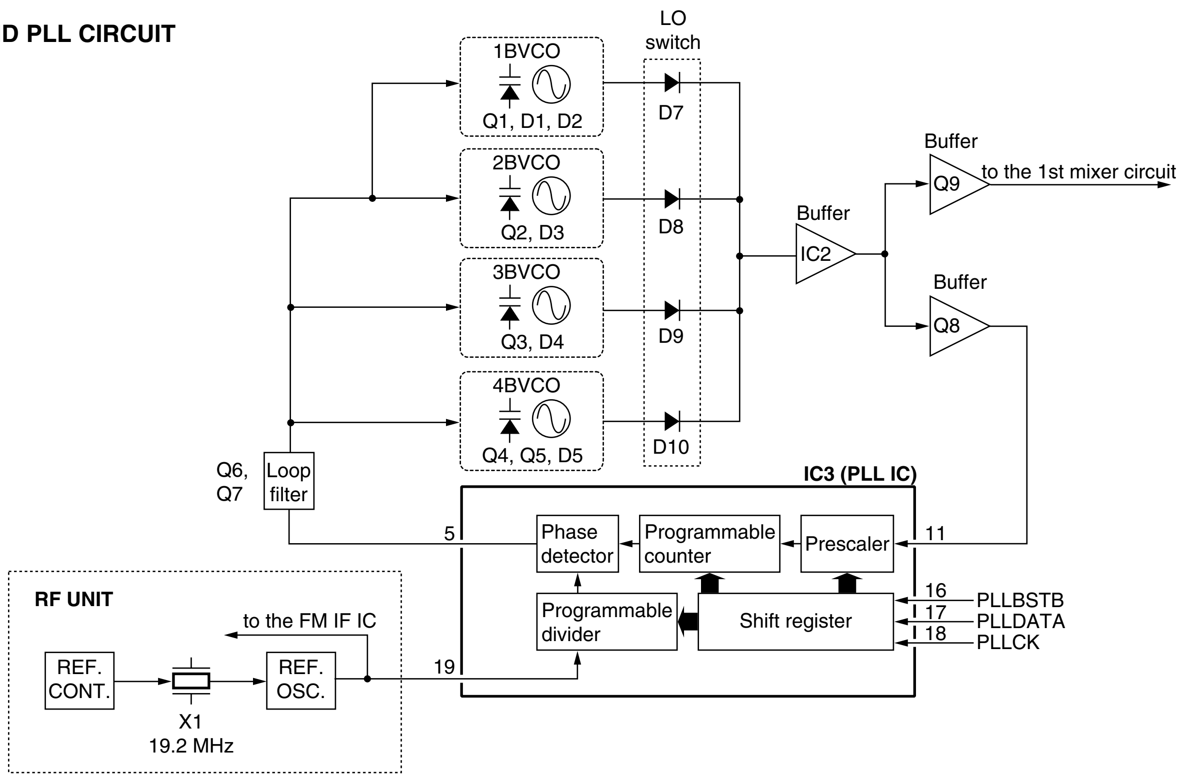
The 2nd C-VCO circuit (Q1 and D1) generates 409.4500 MHz and 448.7500 MHz. The oscillated signal is applied to the 2nd mixer (RF unit; IC10, pin 3), and is then mixed with the 1st IF signal.

A part of oscillated signal from the 2nd C-VCO circuit is applied to the PLL IC (IC1, pin 8) as the comparison signal, and is then output from pin 5. The signal passes through the loop filter (R14, R15 and R22), and is then applied to the 2nd C-VCO circuit again as PLL lock voltage.

• 2ND C VCO CIRCUIT

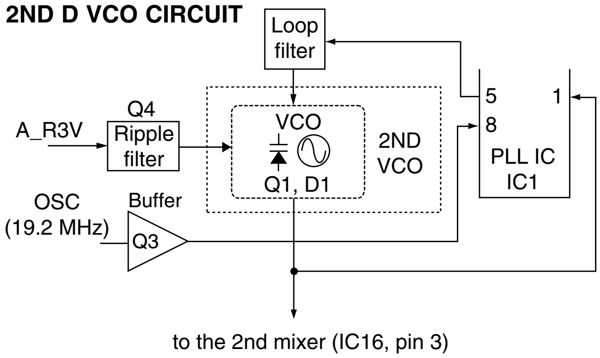


• B-BAND PLL CIRCUIT



• B-BAND CIRCUIT (2NDDVCO BOARD)
The 2nd D-VCO circuit (Q1 and D1) generates 247.0500 MHz and 286.3500 MHz. The oscillated signal is applied to the 2nd mixer (RF unit; IC16, pin 3), and is then mixed with the 1st IF signal.

• 2ND D VCO CIRCUIT



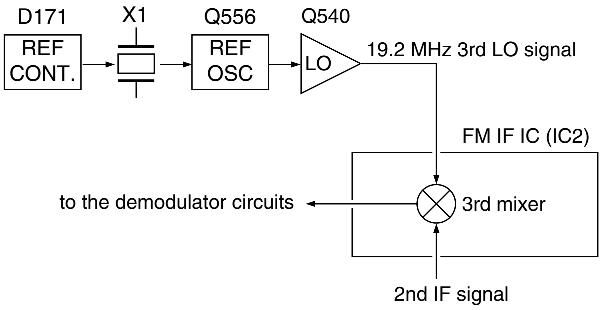
A part of oscillated signal from the 2nd C-VCO circuit is applied to the PLL IC (IC1, pin 8) as the comparison signal, and is then output from pin 5. The signal passes through the loop filter (R14, R15 and R22), and is then applied to the 2nd D-VCO circuit again as PLL lock voltage.

4-2-5 3RD LO CIRCUIT (RF UNIT)

The 3rd LO circuit uses 19.2 MHz reference signal which is generates at the X1 and Q556.

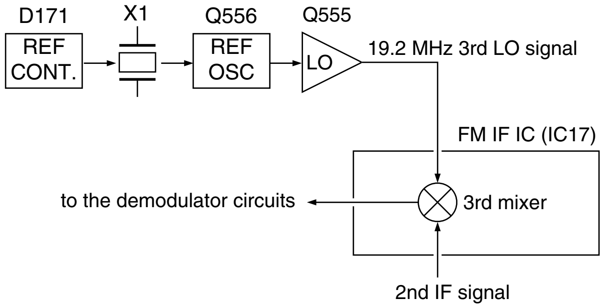
• A-BAND CIRCUIT
The 19.2 MHz reference signal is amplified at the LO amplifier (Q540), and is then applied to the FM IF IC (IC2, pin 2) as the 3rd LO signal.
The signal is mixed with 2nd IF signal to convert into 3rd IF signal. The 3rd IF signal is applied to one of demodulator (FM/WFM/AM/SSB) circuits.

• 3RD LO CIRCUIT (A-BAND)



• B-BAND CIRCUIT
The 19.2 MHz reference signal is amplified at the LO amplifier (Q555), and is then applied to the FM IF IC (IC17, pin 2) as the 3rd LO signal.
The signal is mixed with 2nd IF signal to convert into 3rd IF signal. The 3rd IF signal is applied to the each demodulator (FM/WFM/AM) circuits.

• 3RD LO CIRCUIT (B-BAND)



4-2-6 DOWN CONVERTER VCO CIRCUIT (DOWNCONV BOARD)

The DOWN CONVERTER circuit uses 19.2 MHz reference signal which is generates at the X1 and Q556 on the RF unit.

The DOWN CONVERTER VCO circuit (Q1 and D3) generates 1001 MHz or 2002 MHz. The oscillated signal is amplified at the buffer amplifier (Q4), and passes through band switch.

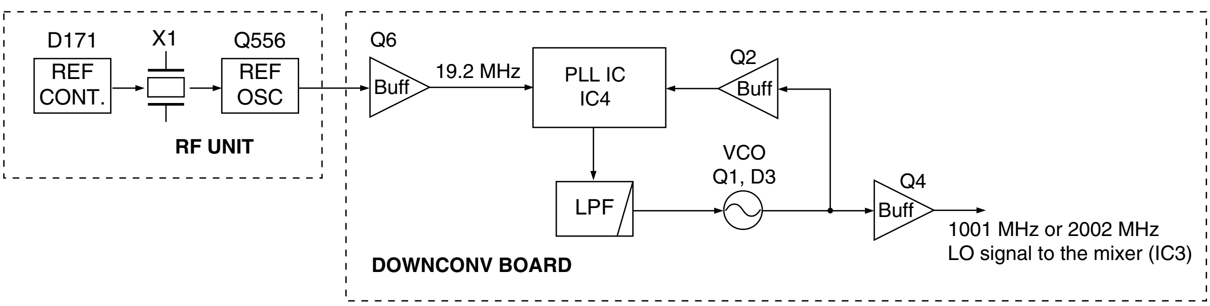
When receiving 1305–2305.999 MHz RF signals, 1001 MHz LO signal is selected. The RF signals pass through band switch (D6), and then pass through another band switch (D8).

When receiving 2306–3304.999 MHz, 2002 MHz LO signal is selectd. The RF signals pass through the band switch (D5), and then pass through the high-pass filter (L9, L10 and C28–C32). The signals passes through another band switch (D7).

The 1001 MHz or 2002 MHz LO signal is applied to the mixer circuit (IC3, pin 3).

A part of oscillated signal from the DOWN CONVERTER VCO circuit is amplified at the buffer amplifier (Q2), and is then applied to the PLL IC (IC4, pin 8) as the comparison signal, and is then output from pin 5. The signal passes through the loop filter (L6, C21, C22 and C40), and is then applied to the DOWN CONVERTER VCO circuit again as PLL lock voltage.

• DOWN CONVERTER VCO CIRCUIT



4-2-7 BFO CIRCUIT (LOGIC UNIT)

The oscillated signal at the BFO VCO circuit (IC6, X2) is applied to the MAIN unit via the J5 (pin 35) as the BFO, and is then amplified at the BFO amplifier (RF unit; Q530). The amplified signal is mixed with 3rd IF signal to demodulate to AF signal on SSB/CW modes.

The carrier frequency is shifted by “BFO_SHIFT” signal from the main CPU (IC3, pin 2) while receiving SSB modes.

4-3 OTHER CIRCUITS

4-3-1 BATTERY CHARGER CIRCUIT (LOGIC UNIT)

When charging the installed battery (BP-206), the battery charger control signal (CHGC) becomes high, and is then output from the CPU (IC3, pin 39). The signal is applied to the battery charger controller (Q34), and its output controls the battery charger circuit (Q31, D28, D29) to output 400 mA (typical) charging current.

4-3-2 BAR ANTENNA TUNING CIRCUIT (RF UNIT)

When selecting the internal bar antenna while AM band signals are receiving, the interal bar antenna switching signal is output from the D/A converter (IC22, pin 7) as “ANTSW” signal. The signal is applied to the antenna switching circuit (Q510, D76), and then switches to the internal bar antenna.

The expander IC (IC14) outputs the “A-TRAC” bar antenna control signal from pin 8. The signal is applied to the level converter (Q513), and is then applied to the AM bar antenna tune circuit (D100). The circuit tunes to the desire frequency to change the D100’s capacity.

4-3-3 EARPHONE ANTENNA CIRCUIT (LOGIC AND RF UNITS)

When selecting the earphone antenna while WFM band receiving, the received RF signal passes through the external speaker jack (LOGIC unit; J3). The signal is applied to the RF unit via the J5, pin 4 as “EAR” signal. The signal is applied to the antenna switch (RF unit; D101), and is then applied to the 30–300 MHz RF circuit.

4-3-4 RESET CIRCUIT (LOGIC UNIT)

When [POWER] switch is ON, CPU3 signal from the +3 regulator (IC8) is applied to the reset IC (IC2, pin 2). The IC outputs reset signal via the “RESET” line, and the signal is applied to the main CPU (IC3, pin 10) to reset it.

4-3-5 LCD BACKLIGHT CIRCUIT (LOGIC UNIT)

When the LCD backlight is ON, the LCD backlight control signal becomes high, and is output from the main CPU (IC3, pin 41) as “LIGHT” signal. The signal is applied to the backlight control switch (Q2, Q4 and Q5), and is then applied to the LCD backlight LEDs (DS1–DS9 and EP12).

4-4 POWER SUPPLY CIRCUITS

4-4-1 LOGIC UNIT VOLTAGE LINES

Line	Description
VCC	The voltage is same as connected battery pack. The voltage is supplied to the charge controller (Q32).
CPU3V	Common 3 V converted from the VCC line or external DC power supply by the +3 regulator (IC8, pins 1 and 5). The output voltage is supplied to the main CPU (IC3), reset IC (IC2), EEPROM (IC1), etc.
+3S	Common 3 V converted from the CPU3V line by the +3 regulator (Q13 and Q14). The regulator is controlled by the +3SC line from the main CPU (IC3, pin 40). The output voltage is supplied to the electronics volume (IC7), pre-amplifiers (Q12 and Q16), etc.
+3V	Common 3 V converted from the CPU3V line by the +3 regulator circuit (Q17). The output voltage is supplied to the CI-V interface circuit (IC4, Q3 and Q6), etc.
A_R3	Receive 3 V converted from the VCC line or external DC power supply by the +3 regulators (IC9, pins 1 and 5; Q10). The regulator is controlled by the A_R3C line from the main CPU (IC3, pin 67). The output voltage is supplied to the RF unit, etc.
B_R3	Receive 3 V converted from the VCC line or external DC power supply by the +3 regulators (IC9, pins 1 and 5; Q15). The regulator is controlled by the B_R3C line from the main CPU (IC3, pin 75). The output voltage is supplied to the RF unit, etc.

4-4-2 REC UNIT VOLTAGE LINES

Line	Description
+3V	Common 3 V from the LOGIC unit via the J7, pin 1, and is then supplied to the SUB_3V regulator (Q2). The regulator is controlled by SUB_3C line from the sub CPU (IC2, pin 45).
SUB_3V	Common 3 V converted from +3V line by the SUB_3V regulator (Q2). The output voltage is supplied to the sub CPU (IC2), memory (IC6), RECORDING IC (IC7), etc.

4-4-2 REC UNIT VOLTAGE LINES

Line	Description
+3V	Common 3 V from the LOGIC unit via the J7, pin 1, and is then supplied to the SUB_3V regulator (Q2). The regulator is controlled by SUB_3C line from the sub CPU (IC2, pin 45).
SUB_3V	Common 3 V converted from +3V line by the SUB_3V regulator (Q2). The output voltage is supplied to the sub CPU (IC2), memory (IC6), RECORDING IC (IC7), etc.

4-4-3 RF UNIT VOLTAGE LINES

Line	Description
A_R3V	Receive 3 V line from the LOGIC unit via the J1, pin 37. The voltage is supplied to the RF (IC19), IF (Q5) and LO (Q540) amplifiers, 1st (IC1) and 2nd (IC10) mixers, regulators, etc.
B_R3V	Receive 3 V line from the LOGIC unit via the J1, pin 22. The voltage is supplied to the RF (IC18), IF (Q542) and LO (Q555) amplifiers, 1st (IC15) and 2nd (IC16) mixers, regulators, etc.
HF3V	Receive 3 V converted from the A_R3V line by the +3 regulator (Q509). The regulator is controlled by the HFC line from the main CPU (LOGIC unit; IC3, pin 46).
NB3V	Common 3 V converted from the A_R3V line by the +3 regulator (Q527). The regulator is controlled by the NBC line from the D/A converter (IC22, pin 13).
300M3V	Receive 3 V converted from the A_R3V line by the +3 regulator (Q501). The regulator is controlled by the A_300MC line from the expander IC (IC14, pin 3).
A_VHF3V	Receive 3 V converted from the A_R3V line by the +3 regulator (Q502). The regulator is controlled by the A_VHFC line from the expander IC (IC14, pin 2).
A_UHF3V	Receive 3 V converted from the A_R3V line by the +3 regulator (Q502). The regulator is controlled by the A_UHFC line from the expander IC (IC14, pin 4).
B_VHF3V	Receive 3 V converted from the B_R3V line by the +3 regulator (Q554). The regulator is controlled by the B_VHFC line from the expander IC (IC20, pin 2).
B_UHF3V	Receive 3 V converted from the B_R3V line by the +3 regulator (Q554). The regulator is controlled by the B_UHFC line from the expander IC (IC20, pin 3).
B_G3V	Receive 3 V converted from the B_R3V line by the +3 regulator (Q503). The regulator is controlled by the B_GC line from the expander IC (IC20, pin 4).
B_800M3V	Receive 3 V converted from the B_R3V line by the +3 regulator (Q503). The regulator is controlled by the B_800MC line from the expander IC (IC20, pin 5).
B_AM3V	Receive 3 V converted from the B_R3V line by the +3 regulator (Q546). The regulator is controlled by the B_AMC line from the expander IC (IC20, pin 18).

4-5 PORT ALLOCATIONS

4-5-1 MAIN CPU PORT ALLOCATIONS (LOGIC UNIT; IC3)

Pin number	Port name	Description
3	DATAC	Outputs data and clock control signal.
8 9	CLS1 CLS0	Output clock shift signals.
46	HVDET	Input port for the detecting signal whether the external power supply is connecting or not. Low : The external power supply is connected.
17	AFON	Outputs control signal to the AF amplifier.
18	POWER	Input port for [POWER] key.
19	B_AMUTE	Outputs B-band mute control signal. High : While B-band is muting.
20	A_AF_THURU	Outputs A-BAND de-emphasis control signal.
21–24	A_DUD A_DCK B_DUD B_DCK	Input ports for [A-DIAL]/[B-DIAL].
25	SQL	Input port for [SQL] switch. Low : While [SQL] switch is pushed.
26	SUB_3C	Outputs REC unit regulator control signal. High : While recording or playing.
31	A_VCO1	Outputs A-BAND's 1st LO control signal.
34	VRSTR	Outputs strobe signals for volume.
36	REC	Outputs recording LED control signal.
38	CHGS	Outputs charging current control signal. High : While rapid charging.
39	CHGC	Outputs charger circuit control signal. High : While charging.
40	+3S	Outputs +3S regulator control signal.
41	LIGHT	Outputs LCD back light control signal. Low : Lights ON.
42	LD1	Outputs strobe signals to the expander IC (RF unit; IC14, pin 15).
43	B2C	Outputs BAND2 selecting signal in the HF band.
44	B3C	Outputs BAND3 selecting signal in the HF band.
45	B1C	Outputs BAND1 selecting signal in the HF band.
46	HFC	Outputs HF band selecting signal at A-BAND.
47	PLLDATA	Outputs data signal to the PLL IC.

(LOGIC unit; IC3)–Continued

Pin number	Port name	Description
48	STR2	Outputs strobe signal to the D/A converter IC (IC22, pin 1).
49–52	KS3–KS1	Output key matrix signals.
53	I1 PCON	• Input port for the matrix signal. • Outputs power ON/OFF control signal.
54	L0 B_TCON	• Input port for the matrix signal. • Outputs B-RTONE filter amplifier control signal.
55–61	KR5–KR0	Input ports for key matrix
63	B_AF_THURU	Outputs B-BAND de-emphasis control signal.
64	PLLASTB	Outputs strobe signals to the A-BAND 1st LO circuit.
65	PLLCSTB	Outputs strobe signals to the A-BAND 2nd LO circuit.
66	PLLESTB	Outputs strobe signals to the DOWN CONVERTER LO circuit.
67	A_R3C	Outputs A-BAND power supply circuit control signal. Low : While A-BAND receiving.
68	PLLCK	Outputs clock signal to the PLL IC.
69	PLLDSTB	Outputs strobe signals to the B-BAND 2nd LO circuit.
70	PLLBSTB	Outputs strobe signals to the B-BAND 1st LO circuit.
71	A_TCON	Outputs A-RTONE filter amplifier control signal.
72	LCD_CS	Outputs LCD chip select signal.
74	BFOC	Outputs BFO control signal. Low : While SSB is receiving.
75	B_R3C	Outputs B-BAND power supply circuit control signal. Low : While B-BAND receiving.
76	LCD_RESET	Outputs reset signal to the LCD.
77	LCD_RS	Outputs command and data signals to the LCD.
78	LD2	Outputs strobe signals to the expander IC (RF unit; IC20, pin 15).
79–81	B_VCO2 B_VCO3 B_VCO4	Output B-BAND 1st LO circuit control signals.
98	ECK	Outputs clock signal to the EEPROM (IC1, pin 6).
99	ESIO	I/O port for data signal from/to the EEPROM (IC1, pin 5).

4-5-2 SUB CPU PORT ALLOCATIONS (REC UNIT; IC2)

Pin number	Port name	Description
18	RSTO	Input port for the USB reset signal.
19	PWREN	Input port for the USB suspend signal.
24	FIFOST	Outputs recording/playing select signal.
25	CBUSY	Input port for the ADPCM command waiting signal.
26–28	EMP MID FUL	Input ports for the ADPCM buffer signals.
35 36	B_SQL A_SQL	Output recording mute signals.
25	SUB_3C	Input port for the power supply verifying signal.

4-5-3 EXPANDER IC PORT ALLOCATIONS (RF UNIT; IC22)

Pin number	Port name	Description
4	DOWN_CONV	Outputs the down converter control signal.
5	2GLO	Outputs 2002 MHz LO select signal for the down converter.
6	1GLO	Outputs 1001 MHz LO select signal for the down converter.
7	ANTSW	Outputs the bar antenna select signal. High : The bar antenna is selected.
11	APS	Outputs the power save control signal to the A-BAND circuit. Low : While the A-BAND circuit is power saving.
12	A_WFM	Outputs WFM mode select signal at the A-BAND circuit.
13	NBC	Outputs noise blanker control signal.
14	BPS	Outputs the power save control signal to the B-BAND circuit. Low : While the B-BAND circuit is power saving.

4-5-4 D/A CONVERTER IC PORT ALLOCATIONS (RF UNIT; IC14)

Pin number	Port name	Description
2	A_VHFC	Outputs VHF band selecting signal at the A-BAND circuit.
3	A_300MC	Outputs 300 MHz band selecting signal at the A-BAND circuit.
4	A_UHFC	Outputs UHF band selecting signal at the A-BAND circuit.
6	A_VCO3	Outputs the A-BAND 1st LO circuit control signal.
7	A_NFMC	Outputs narrow FM mode selecting signal at the A-BAND circuit.
13	A_ANLC	Outputs ANL (Automatic Noise Limiter) control signal at A-BAND circuit. High : While ANL is ON.
18	A_AMC	Outputs AM mode selecting signal at the A-BAND circuit.
19	SSBC	Outputs narrow SSB mode selecting signal at the A-BAND circuit.

4-5-5 D/A CONVERTER IC PORT ALLOCATIONS (RF UNIT; IC20)

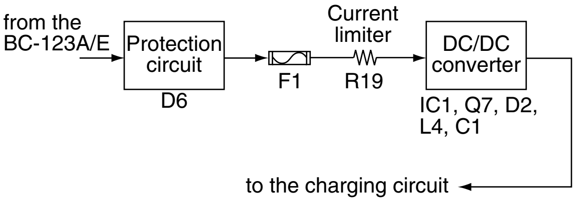
Pin number	Port name	Description
2	B_VHFC	Outputs VHF band selecting signal at the B-BAND circuit.
3	B_UHFC	Outputs UHF band selecting signal at the B-BAND circuit.
4	B_GC	Outputs GHz band selecting signal at the B-BAND circuit.
5	B-800MC	Outputs 800 MHz band selecting signal at the B-BAND circuit.
7	A_WFMC	Outputs wide FM mode selecting signal at the B-BAND circuit.
8	B_VCO1	Outputs the B-BAND 1st LO circuit control signal.
9	B_ANLC	Outputs ANL (Automatic Noise Limiter) control signal at B-BAND circuit. High : While B-BAND ANL is ON.
18	A_AMC	Outputs AM mode selecting signal at the B-BAND circuit.
19	B_AM_FM	Outputs narrow AM or narrow FM mode selecting signal at the B-BAND circuit.

4-6 BC-156 CIRCUIT DESCRIPTION

4-6-1 DC/DC CONVERTER CIRCUIT (MAIN UNIT)

Input voltage (8–16 V) from the BC-123A/E pass through reverse protection circuit (D6) via the J1. The voltage pass through the current limiter (R19) which can pass less than 2.0 A via the fuse (F1), and is then applied to the DC/DC converter circuit (IC2, Q7, D2, L1 and C4). The circuit converts 8–16 V input voltage to obtain approximately 5.2 V/2 A, and the converted voltage is applied to the charging circuit (IC1, Q1).

• DC/DC CONVERTER CIRCUIT



4-6-2 CHARGING CIRCUIT (MAIN UNIT AND TANSHI BOARD)

The converted voltage from the DC/DC converter circuit is applied to the charging circuit (MAIN unit; IC1, Q1), and is then applied to the TANSHI board via the J4, pins 1 and 2 (MAIN unit) as “CHGOUT” signal. The signal passes through the charging current detector (R1), and is then applied to the charging selector (TANSHI board; RL1) which is controlled by “CONT” signal. The signal is then applied to the CP1 (TANSHI board) as “SBATT+” signal or CP4 as “BATT+” signal.

A part of “CHGOUT” signal is applied to the charging circuit (IC1, pins 13 and 14) via the J1, pin 6 (TANSHI board) to control battery charging.

4-6-3 CHARGING CONTROL CIRCUIT (MAIN UNIT AND TANSHI BOARD)

• CHARGING THE BATTERY WITH IC-R20

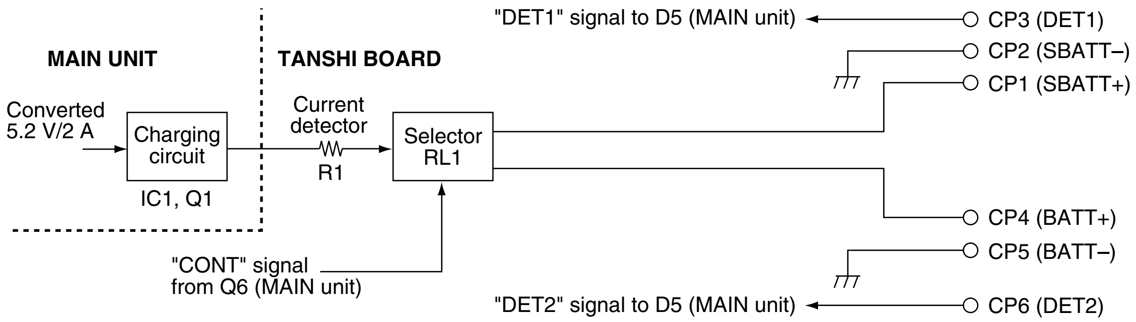
The “DET2” signal from the TANSHI board is applied to the D5 (MAIN unit) via the J4 (MAIN unit), and is then applied to the Q4 (MAIN unit). As Q4 turns ON, the output signal from Q4 is applied to the D4. The signal is applied to the Q3 to turn ON, then the output signal from Q3 is applied to the charging control IC (MAIN unit; IC1, pin 2). The IC controls Q1’s base voltage to keep stable voltage/current battery charging.

A part of signal from Q4 (MAIN unit) is applied to the charging selector circuit (TANSHI board; RL1) via the J1, pin 8 (TANSHI board) as “CONT” signal.

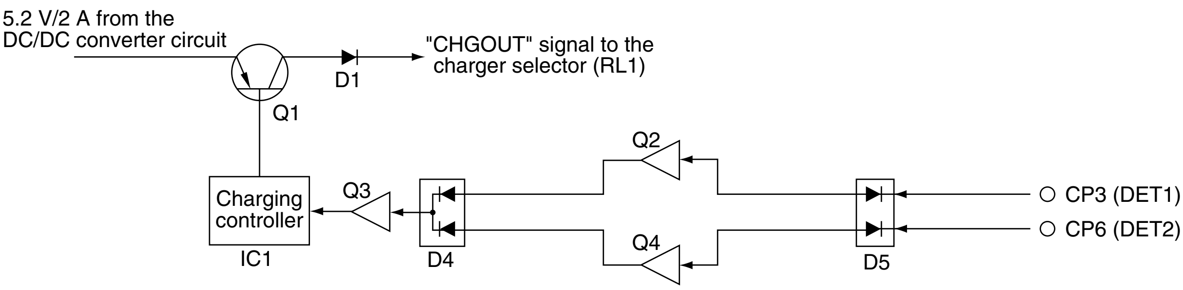
• CHARGING THE BATTERY ONLY

The “DET1” signal from the TANSHI board is applied to the D5 (MAIN unit) via the J4 (MAIN unit), and is then applied to the Q2 (MAIN unit). As Q2 turns ON, the output signal from Q2 is applied to the D4. The signal is applied to the Q3 to turn ON, then the output signal from Q3 is applied to the charging control IC (MAIN unit; IC1, pin 2). The IC controls Q1’s base voltage to keep stable voltage/current battery charging.

• CHARGING CIRCUIT



• CHARGING CONTROL CIRCUIT



SECTION 5 ADJUSTMENT PROCEDURES

5-1 PREPARATION

Almost adjustments must be adjusted on the adjustment mode. The shorten plug (see below) is required when entering the adjustment mode.

■ REQUIRED TEST EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
DC power supply	Output voltage : 6.0 V DC Current capacity : 1 A or more	Digital multimeter	Input impedance : 10 kΩ/V DC or better
Frequency counter	Frequency range : 0.1–1000 MHz Frequency accuracy : ±1 ppm or better Sensitivity : 100 mV or better	Standard signal generator (SSG)	Frequency range : 0.1–3000 MHz Output level : 0.1 μV–32 mV (–127 to –17 dBm)

■ ENTERING THE ADJUSTMENT MODE

① Connect the shorten plug to the [SP] jack.
② Push and hold **[8 SET]**, **[MR S.MW]**, **[BAND]** and **[MAIN/SUB]** keys, and then turn power ON.
NOTE: Entering adjustment mode, keep on entering adjustment mode until dis-connect the shorten plug and turn power OFF.

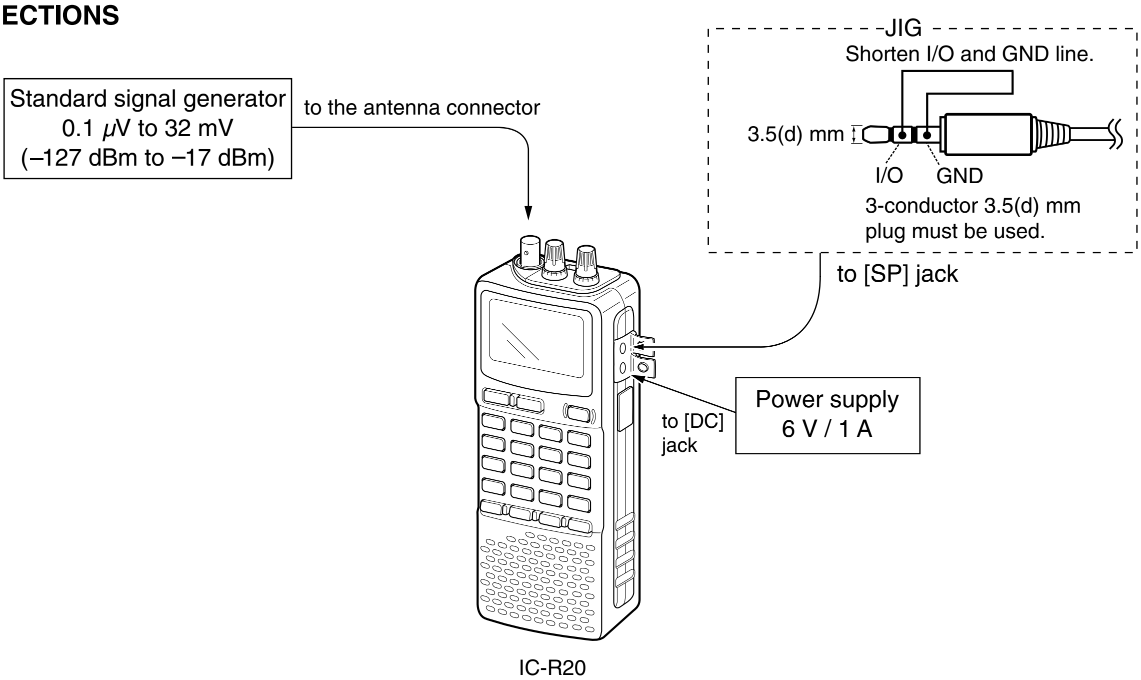
■ OPERATION ON THE ADJUSTMENT MODE

Change the adjustment channel or item [UP] : **[MR S.MW]** key
Change the adjustment channel or item [DOWN] : **[SCOPE]** key
Change the adjustment value : **[R-DIAL]**

While entering adjustment mode, some adjustments must push **[• LOCK]** or **[8 SET]** keys to write the adjustment value to the CPU. Refer to following list in detail.

KEY	OPERATION
[• LOCK]	Write the REFERENCE FREQUENCY ADJUSTMENT value.
	Write the BFO ADJUSTMENT value.
	Write the AFC ADJUSTMENT value.
[8 SET]	Write the TRACKING ADJUSTMENT value.
	Write the S-METER ADJUSTMENT value.

■ CONNECTIONS

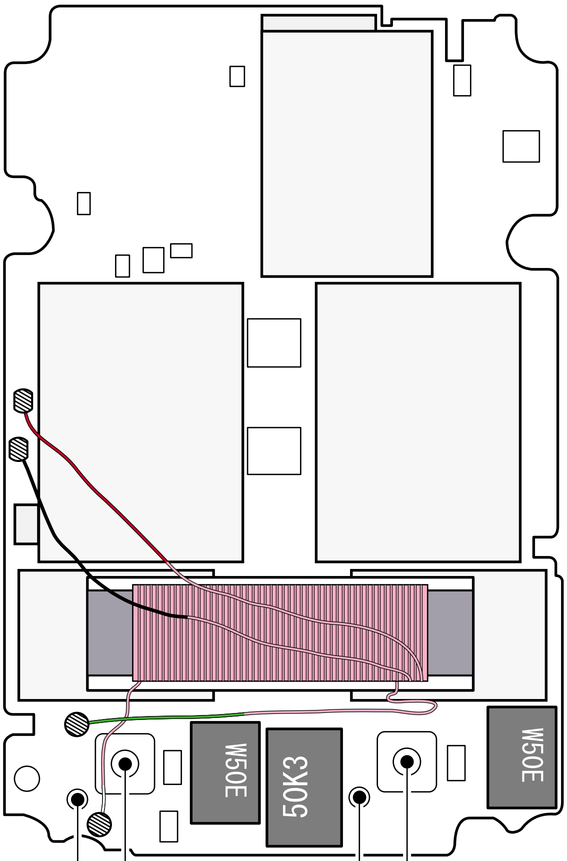


5-2 SOFTWARE ADJUSTMENTS

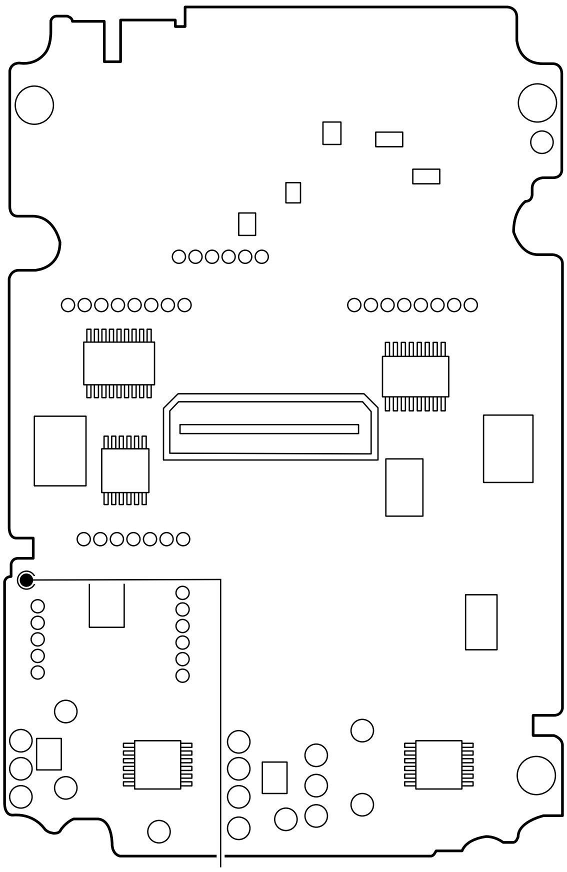
ADJUSTMENT		ADJUSTMENT CONDITION	OPERATION
REFERENCE FREQUENCY [REF]	1	• Connect the frequency counter to the check point CP18 on the RF unit. • Receiving	• Rotate **[R-DIAL]** to set to 247.05000 MHz. • Push **[• LOCK]** key.
CENTER VOLTAGE	1	• Dual watch mode : ON • Set the receiver to [A-BAND] and FM mode. • Operating frequency : 145.100 MHz • Connect an SSG to the antenna connector and set as Level : 1 mV* (–47 dBm) Frequency : 145.100 MHz Modulation : OFF • Connect the Digital multimeter to the check point CP1 on the RF unit. • Receiving	• Adjust L21 to CP1 voltage to be 1.0 V.
	2	• Set the receiver to [B-BAND] and FM mode. • Operating frequency : 145.100 MHz • Connect an SSG to the antenna connector and set as Level : 1 mV* (–47 dBm) Frequency : 145.100 MHz Modulation : OFF • Connect the Digital multimeter to the check point CP11 on the RF unit. • Receiving	• Adjust L105 to CP11 voltage to be 1.0 V.
BFO [LSB]	1	• Connect the frequency counter to the check point on the LOGIC unit (See page 5-3). • Receiving	• Rotate **[R-DIAL]** to set to 448.5 kHz. • Push **[• LOCK]** key.
[USB]	2	• Connect the frequency counter to the check point on the LOGIC unit (See page 5-3). • Receiving	• Rotate **[R-DIAL]** to set to 451.5 kHz. • Push **[• LOCK]** key.
[CW]	3	• Connect the frequency counter to the check point on the LOGIC unit (See page 5-3). • Receiving	• Rotate **[R-DIAL]** to set to 449.2 kHz. • Push **[• LOCK]** key.
SSB-IF SHIFT [LSB-IFS]	1	• Connect an SSG to the antenna connector and set as Frequency : 14.0990 MHz Modulation : OFF • Receiving	• Set an SSG's level to 10 dB S/N sensitivity (Ⓐ). • Measure the AF output level while the IC-R20 outputs 1 kHz signal (Ⓑ).
	2	• Set an SSG as Level : Ⓐ+ 35 dB Frequency : 14.1005 MHz Modulation : OFF • Receiving	• Measure the AF output level (Ⓒ). • If AF output level Ⓒ is lower than Ⓑ, skip this adjustment. • If AF output level Ⓒ is higher than Ⓑ, rotate **[R-DIAL]** to adjust the AF output level to the same level as Ⓑ. • Push **[• LOCK]** key.
[USB-IFS]	3	• Connect an SSG to the antenna connector and set as Frequency : 14.1010 MHz Modulation : OFF • Receiving	• Set an SSG's level to 10 dB S/N sensitivity (Ⓐ). • Measure the AF output level while the IC-R20 outputs 1 kHz signal (Ⓑ).
	4	• Set an SSG as Level : Ⓐ+ 35 dB Frequency : 14.0995 MHz Modulation : OFF • Receiving	• Measure the AF output level (Ⓒ). • If AF output level Ⓒ is lower than Ⓑ, skip this adjustment. • If AF output level Ⓒ is higher than Ⓑ, rotate **[R-DIAL]** to adjust the AF output level to the same level as Ⓑ. • Push **[• LOCK]** key.

*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.

• RF UNIT BOTTOM VIEW



• RF UNIT TOP VIEW



L105
Center voltage adjustment (B-BAND)

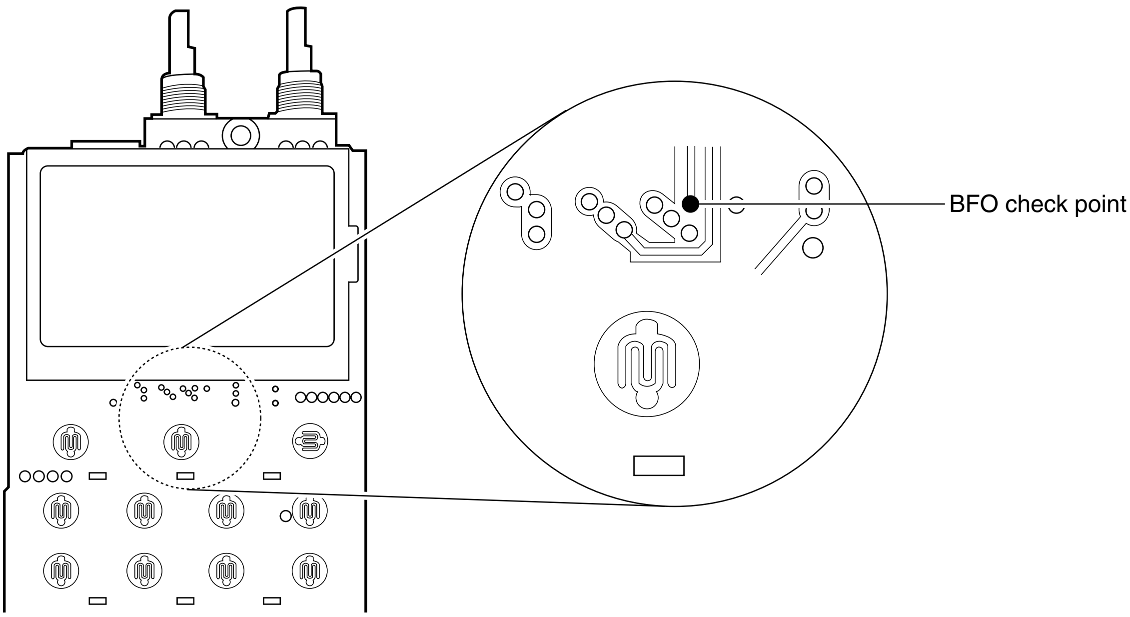
CP11
Center voltage check point (B-BAND)

L21
Center voltage adjustment (A-BAND)

CP1
Center voltage check point (A-BAND)

CP18
Reference frequency check point

• BFO CHECK POINT (LOGIC UNIT TOP VIEW)



SOFTWARE ADJUSTMENTS–Continued

ADJUSTMENT		ADJUSTMENT CONDITION	OPERATION
AFC [AFC] (FM A-BAND)	1	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 1 mV* (–47 dBm) Frequency : 145.100 MHz Modulation : OFF • Receiving	• Push **[• LOCK]** key.
(WFM A-BAND)	2	• Mode : WFM • Receiving	• Push **[• LOCK]** key.
(FM B-BAND)	3	• Mode : FM • Receiving	• Push **[• LOCK]** key.
(WFM B-BAND)	4	• Mode : WFM • Receiving	• Push **[• LOCK]** key.
TRACKING [TRL/TRH] (0.495 MHz Bar Antenna tuning)	1	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 71 mV* (–10 dBm) Frequency : 0.495 MHz Modulation : ±1 kHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(1.620 MHz Bar Antenna tuning)	2	• Connect an SSG to the antenna connector and set as Level : 220 mV* (0 dBm) Frequency : 1.620 MHz • Receiving	• Push **[8 SET]** key.
(118.1 MHz RF amplifier tuning)	3	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 118.1 MHz • Receiving	• Push **[8 SET]** key.
(174.9 MHz RF amplifier tuning)	4	• Connect an SSG to the antenna connector and set as Frequency : 174.9 MHz • Receiving	• Push **[8 SET]** key.
(330.1 MHz RF amplifier tuning)	5	• Connect an SSG to the antenna connector and set as Frequency : 330.1 MHz • Receiving	• Push **[8 SET]** key.
(469.9 MHz RF amplifier tuning)	6	• Connect an SSG to the antenna connector and set as Frequency : 469.9 MHz • Receiving	• Push **[8 SET]** key.
(118.1 MHz RF amplifier tuning)	7	• Connect an SSG to the antenna connector and set as Frequency : 118.1 MHz • Receiving	• Push **[8 SET]** key.
(174.9 MHz RF amplifier tuning)	8	• Connect an SSG to the antenna connector and set as Frequency : 174.9 MHz • Receiving	• Push **[8 SET]** key.
(330.1 MHz RF amplifier tuning)	9	• Connect an SSG to the antenna connector and set as Frequency : 330.1 MHz • Receiving	• Push **[8 SET]** key.
(469.9 MHz RF amplifier tuning)	10	• Connect an SSG to the antenna connector and set as Frequency : 469.9 MHz • Receiving	• Push **[8 SET]** key.
(470.1 MHz RF amplifier tuning)	11	• Connect an SSG to the antenna connector and set as Frequency : 470.1 MHz • Receiving	• Push **[8 SET]** key.
(599.9 MHz RF amplifier tuning)	12	• Connect an SSG to the antenna connector and set as Frequency : 599.9 MHz • Receiving	• Push **[8 SET]** key.

*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.

SOFTWARE ADJUSTMENTS–Continued

ADJUSTMENT		ADJUSTMENT CONDITION	OPERATION
S-METER [S-M] (1.81 MHz FM mode)	1	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 1.81 MHz Modulation : ±1 kHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(1.81 MHz WFM mode)	2	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Deviation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.
(14.1 MHz FM mode)	3	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 14.1 MHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(14.1 MHz WFM mode)	4	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Deviation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.
(145.1 MHz FM mode)	5	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 145.1 MHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(145.1 MHz WFM mode)	6	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Deviation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.
(201.1 MHz FM mode)	7	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 201.1 MHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(201.1 MHz WFM mode)	8	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Deviation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.
(435.1 MHz FM mode)	9	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 435.1 MHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(435.1 MHz WFM mode)	10	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Modulation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.

*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.

SOFTWARE ADJUSTMENTS–Continued

ADJUSTMENT		ADJUSTMENT CONDITION	OPERATION
S-METER [S-M] (1400.1 MHz FM mode)	11	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 1400.1 MHz Modulation : ±1 kHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(1400.1 MHz WFM mode)	12	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Deviation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.
S-METER [S-M] (145.1 MHz FM mode)	13	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 145.1 MHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(145.1 MHz WFM mode)	14	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Deviation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.
(435.1 MHz FM mode)	15	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 435.1 MHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(435.1 MHz WFM mode)	16	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Deviation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.
(650.1 MHz FM mode)	17	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 650.1 MHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(650.1 MHz WFM mode)	18	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Deviation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.
(1100.1 MHz FM mode)	19	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 1100.1 MHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(1100.1 MHz WFM mode)	20	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 5.6 μV* (–92 dBm) Modulation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.

*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.

SOFTWARE ADJUSTMENTS–Continued

ADJUSTMENT		ADJUSTMENT CONDITION	OPERATION
S-METER [S-M] (2510.1 MHz FM mode)	21	• Mode : FM • Connect an SSG to the antenna connector and set as Level : 0.56 μV* (–112 dBm) Frequency : 2510.1 MHz Modulation : ±1 kHz Deviation : ±3.5 kHz • Receiving	• Push **[8 SET]** key.
(2510.1 MHz WFM mode)	22	• Mode : WFM • Connect an SSG to the antenna connector and set as Level : 32 μV* (–77 dBm) Deviation : ±52.5 kHz • Receiving	• Push **[8 SET]** key.

*This output level of a standard signal generator (SSG) is indicated as SSG's open circuit.

SECTION 6 PARTS LIST

6-1 IC-R20

[1STAVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC2	1110005180	S.IC	μPC2746TB-E3	B
IC3	1130011660	S.IC	MB15T61ULPVA-G-ER	B
Q1	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q2	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q3	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q6	1560000530	S.FET	2SK880-GR (TE85R)	B
Q7	1530003000	S.TRANSISTOR	2SC4117-BL (TE85R)	B
Q8	1530003580	S.TRANSISTOR	2SC5231C8-TL	B
Q9	1530003580	S.TRANSISTOR	2SC5231C8-TL	B
Q11	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q12	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q13	1530003590	S.TRANSISTOR	2SC5277D2-TL	B
D1	1720000400	S.VARICAP	1SV245 (TPH3)	T
D2	1720000400	S.VARICAP	1SV245 (TPH3)	T
D3	1750001050	S.VARICAP	HVC417CTRU	T
D4	1750001050	S.VARICAP	HVC417CTRU	T
D7	1790001620	S.DIODE	1SV308 (TPL3)	T
D8	1790001620	S.DIODE	1SV308 (TPL3)	T
D9	1790001620	S.DIODE	1SV308 (TPL3)	T
L1	6200009350	S.COIL	ELJRE R22G-F3	T
L2	6200009350	S.COIL	ELJRE R22G-F3	T
L3	6200010030	S.COIL	C2012C-15NG	T
L4	6200003960	S.COIL	MLF1608A 1R0K-T	T
L5	6200009350	S.COIL	ELJRE R22G-F3	T
L6	6200009980	S.COIL	C2012C-18NG	T
L7	6200003960	S.COIL	MLF1608A 1R0K-T	T
L8	6200009350	S.COIL	ELJRE R22G-F3	T
L9	6200009280	S.COIL	LQW18AN27NG00D (LQW1608A27NG00)	T
L10	6200003960	S.COIL	MLF1608A 1R0K-T	T
R1	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R2	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R3	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R4	7030005210	S.RESISTOR	ERJ2GEJ 822 X (8.2 kΩ)	T
R5	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R6	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R7	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R8	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R9	7030005210	S.RESISTOR	ERJ2GEJ 822 X (8.2 kΩ)	T
R10	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R11	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R12	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R13	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R14	7030005210	S.RESISTOR	ERJ2GEJ 822 X (8.2 kΩ)	T
R15	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R23	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R24	7030007300	S.RESISTOR	ERJ2GEJ 332 X (3.3 kΩ)	B
R25	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R26	7030005290	S.RESISTOR	ERJ2GEJ 682 X (6.8 kΩ)	B
R27	7030005210	S.RESISTOR	ERJ2GEJ 822 X (8.2 kΩ)	B
R28	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	B
R29	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R30	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R31	7030005080	S.RESISTOR	ERJ2GEJ 823 X (82 kΩ)	B
R32	7030007270	S.RESISTOR	ERJ2GEJ 151 X (150 Ω)	B
R33	7030007260	S.RESISTOR	ERJ2GEJ 330 X (33 Ω)	B
R34	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R35	7030009140	S.RESISTOR	ERJ2GEJ 272 X (2.7 kΩ)	B
R36	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R37	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R38	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R40	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	B
R41	7030005300	S.RESISTOR	ERJ2GEJ 150 X (15 Ω)	B
R42	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	B
R43	7030005080	S.RESISTOR	ERJ2GEJ 823 X (82 kΩ)	B
R44	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R45	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B

[1STAVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
R46	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R47	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R48	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R49	7030008300	S.RESISTOR	ERJ2GEJ 184 X (180 kΩ)	B
R50	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R51	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R52	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R53	7030005570	S.RESISTOR	ERJ2GEJ 820 X (82 Ω)	B
R54	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R55	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ) [EUR], [UK], [USA], [CAN]	B
	7030010040	S.RESISTOR	ERJ2GE-JPW [SEA], [EXP-01], [EXP-02]	B
R56	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ) [EUR], [UK], [USA], [CAN]	B
	7030010040	S.RESISTOR	ERJ2GE-JPW [SEA], [EXP-01], [EXP-02]	B
R57	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ) [EUR], [UK], [USA], [CAN]	B
	7030010040	S.RESISTOR	ERJ2GE-JPW [SEA], [EXP-01], [EXP-02]	B
C1	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C2	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C3	4030017360	S.CERAMIC	ECJ0EC1H030B	T
C4	4030017570	S.CERAMIC	ECJ0EC1H040B	T
C5	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C6	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C7	4030017530	S.CERAMIC	ECJ0EC1H0R5B	T
C8	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C9	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C10	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C11	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C12	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C13	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C14	4030017530	S.CERAMIC	ECJ0EC1H0R5B	T
C15	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C16	4030017360	S.CERAMIC	ECJ0EC1H030B	T
C17	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C18	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C19	4030017600	S.CERAMIC	ECJ0EC1H080C	T
C20	4030017570	S.CERAMIC	ECJ0EC1H040B	T
C21	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C22	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C23	4030017530	S.CERAMIC	ECJ0EC1H0R5B	T
C24	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C31	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C35	4030017770	S.CERAMIC	ECJ0EB1E332K	B
C37	4550003220	S.TANTALUM	TEESVA 1E 105M8L	B
C38	4550000930	S.TANTALUM	TEESVA 1D 684M8L	B
C39	4550000930	S.TANTALUM	TEESVA 1D 684M8L	B
C40	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C41	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C42	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C43	4030017350	S.CERAMIC	ECJ0EC1H020B	B
C44	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C46	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C47	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C48	4340000290	S.MYLAR	ECHU 1C 103JX5	B
C49	4030017620	S.CERAMIC	ECJ0EC1H100C	B
C50	4030017380	S.CERAMIC	ECJ0EC1H050B	B
C52	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C53	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C54	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C55	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C56	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C58	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C59	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C60	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C61	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C62	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C63	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C64	4550007040	S.TANTALUM	ECST0JZ106R	B
C65	4550007040	S.TANTALUM	ECST0JZ106R	B
C66	4550007040	S.TANTALUM	ECST0JZ106R	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

[1STAVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
C67	4030017460	S.CERAMIC	ECJ0EB1E102K [EUR], [UK], [USA], [CAN]	B
J1	6910015520	CONNECTOR	IMSA-9230B-1-07Z064-T	B
J2	6910015510	CONNECTOR	IMSA-9230B-1-08Z064-T	B
EP1	0910058163	PCB	B 6080C	

[1STBVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC2	1110005180	S.IC	μPC2746TB-E3	B
IC3	1130011660	S.IC	MB15T61ULPVA-G-ER	B
Q1	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q2	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q3	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q4	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q5	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q6	1560000530	S.FET	2SK880-GR (TE85R)	B
Q7	1530003000	S.TRANSISTOR	2SC4117-BL (TE85R)	B
Q8	1530003580	S.TRANSISTOR	2SC5231C8-TL	B
Q9	1530003580	S.TRANSISTOR	2SC5231C8-TL	B
Q10	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q11	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q12	1530003590	S.TRANSISTOR	2SC5277D2-TL	B
D1	1720000400	S.VARICAP	1SV245 (TPH3)	T
D2	1720000400	S.VARICAP	1SV245 (TPH3)	T
D3	1750001050	S.VARICAP	HVC417CTRU	T
D4	1750001050	S.VARICAP	HVC417CTRU	T
D5	1750001050	S.VARICAP	HVC417CTRU	T
D7	1790001620	S.DIODE	1SV308 (TPL3)	T
D8	1790001620	S.DIODE	1SV308 (TPL3)	T
D9	1790001620	S.DIODE	1SV308 (TPL3)	T
D10	1790001620	S.DIODE	1SV308 (TPL3)	T
L1	6200009350	S.COIL	ELJRE R22G-F3	T
L2	6200009350	S.COIL	ELJRE R22G-F3	T
L3	6200010020	S.COIL	C2012C-12NG	T
L4	6200003960	S.COIL	MLF1608A 1R0K-T	T
L5	6200009350	S.COIL	ELJRE R22G-F3	T
L6	6200010020	S.COIL	C2012C-12NG	T
L7	6200003960	S.COIL	MLF1608A 1R0K-T	T
L8	6200009350	S.COIL	ELJRE R22G-F3	T
L9	6200009280	S.COIL	LQW18AN27NG00D (LQW1608A27NG00)	T
L10	6200003960	S.COIL	MLF1608A 1R0K-T	T
L11	6200004940	S.COIL	MLF1608D R27K-T	T
L12	6200010210	S.COIL	C2012C-22NG	T
L13	6200005740	S.COIL	ELJRE 47NG-F	T
L14	6200005740	S.COIL	ELJRE 47NG-F	T
R1	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R2	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R3	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R4	7030005210	S.RESISTOR	ERJ2GEJ 822 X (8.2 kΩ)	T
R5	7030007250	S.RESISTOR	ERJ2GEJ 220 X (22 Ω) [SEA], [EXP-01], [EXP-02]	T
	7030009160	S.RESISTOR	ERJ2GEJ 181 X (180 Ω) [EUR], [UK], [USA], [CAN]	T
R6	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R7	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R8	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R9	7030005210	S.RESISTOR	ERJ2GEJ 822 X (8.2 kΩ)	T
R10	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω) [EUR], [UK], [USA], [CAN]	T
	7030007250	S.RESISTOR	ERJ2GEJ 220 X (22 Ω) [SEA], [EXP-01], [EXP-02]	T
R11	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R12	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R13	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T

[1STBVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
R14	7030005210	S.RESISTOR	ERJ2GEJ 822 X (8.2 kΩ)	T
R15	7030005000	S.RESISTOR	ERJ2GEJ 471 X (470 Ω)	T
R16	7030005290	S.RESISTOR	ERJ2GEJ 682 X (6.8 kΩ)	T
R17	7030005710	S.RESISTOR	ERJ2GEJ 121 X (120 Ω)	T
R18	7030005290	S.RESISTOR	ERJ2GEJ 682 X (6.8 kΩ)	T
R19	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R23	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R24	7030007300	S.RESISTOR	ERJ2GEJ 332 X (3.3 kΩ)	B
R25	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R26	7030005290	S.RESISTOR	ERJ2GEJ 682 X (6.8 kΩ)	B
R27	7030005210	S.RESISTOR	ERJ2GEJ 822 X (8.2 kΩ)	B
R28	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	B
R29	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R30	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R31	7030005080	S.RESISTOR	ERJ2GEJ 823 X (82 kΩ)	B
R32	7030007270	S.RESISTOR	ERJ2GEJ 151 X (150 Ω)	B
R33	7030007260	S.RESISTOR	ERJ2GEJ 330 X (33 Ω)	B
R34	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R35	7030009140	S.RESISTOR	ERJ2GEJ 272 X (2.7 kΩ)	B
R36	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R37	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R38	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R39	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R40	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	B
R41	7030005300	S.RESISTOR	ERJ2GEJ 150 X (15 Ω)	B
R42	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	B
R43	7030005080	S.RESISTOR	ERJ2GEJ 823 X (82 kΩ)	B
R44	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R45	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R46	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R47	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R48	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R49	7030008300	S.RESISTOR	ERJ2GEJ 184 X (180 kΩ)	B
R50	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R51	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R52	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R53	7030005570	S.RESISTOR	ERJ2GEJ 820 X (82 Ω)	B
R54	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R55	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ) [EUR], [UK], [USA], [CAN]	B
	7030010040	S.RESISTOR	ERJ2GE-JPW [SEA], [EXP-01], [EXP-02]	B
R56	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ) [EUR], [UK], [USA], [CAN]	B
	7030010040	S.RESISTOR	ERJ2GE-JPW [SEA], [EXP-01], [EXP-02]	B
R57	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ) [EUR], [UK], [USA], [CAN]	B
	7030010040	S.RESISTOR	ERJ2GE-JPW [SEA], [EXP-01], [EXP-02]	B
C1	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C2	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C3	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C4	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C5	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C6	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C7	4030017530	S.CERAMIC	ECJ0EC1H0R5B	T
C8	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C9	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C10	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C11	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C12	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C13	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C14	4030017530	S.CERAMIC	ECJ0EC1H0R5B	T
C15	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C16	4030017570	S.CERAMIC	ECJ0EC1H040B	T
C17	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C18	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C19	4030017600	S.CERAMIC	ECJ0EC1H080C	T
C20	4030017570	S.CERAMIC	ECJ0EC1H040B	T
C21	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C22	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C23	4030017530	S.CERAMIC	ECJ0EC1H0R5B	T
C24	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C25	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C26	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C27	4030017540	S.CERAMIC	ECJ0EC1HR75B	T
C28	4030017540	S.CERAMIC	ECJ0EC1HR75B	T
C29	4030017460	S.CERAMIC	ECJ0EB1E102K	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

[1STBVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
C30	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C31	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C35	4030017770	S.CERAMIC	ECJ0EB1E332K	B
C37	4550003220	S.TANTALUM	TEESVA 1E 105M8L	B
C38	4550000930	S.TANTALUM	TEESVA 1D 684M8L	B
C39	4550000930	S.TANTALUM	TEESVA 1D 684M8L	B
C40	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C41	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C42	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C43	4030017350	S.CERAMIC	ECJ0EC1H020B	B
C44	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C45	4030017530	S.CERAMIC	ECJ0EC1H0R5B	T
C46	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C47	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C48	4340000290	S.MYLAR	ECHU 1C 103JX5	B
C49	4030017620	S.CERAMIC	ECJ0EC1H100C	B
C50	4030017380	S.CERAMIC	ECJ0EC1H050B	B
C52	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C53	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C54	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C55	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C56	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C57	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C58	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C59	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C60	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C61	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C62	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C63	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C64	4550007040	S.TANTALUM	ECST0JZ106R	B
C65	4550007040	S.TANTALUM	ECST0JZ106R	B
C66	4550007040	S.TANTALUM	ECST0JZ106R	B
C67	4550007040	S.TANTALUM	ECST0JZ106R	B
C68	4030017460	S.CERAMIC	ECJ0EB1E102K [EUR], [UK], [USA], [CAN] only	B
J1	6910015520	CONNECTOR	IMSA-9230B-1-07Z064-T	B
J2	6910015510	CONNECTOR	IMSA-9230B-1-08Z064-T	B
EP1	0910058174	PCB	B 6081D	

[2NDCVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC1	1130011670	S.IC	MB15E03SLPFV1-G-BND-ER	B
Q1	1530003610	S.TRANSISTOR	FH102-TL	T
Q3	1530003590	S.TRANSISTOR	2SC5277D2-TL	T
Q4	1530003630	S.TRANSISTOR	2SC4617 TLS	T
D1	1750000740	S.VARICAP	1SV314 (TPH3)	T
L1	6200009070	S.COIL	LQW18AN18NG00D (LQW1608A18NG00)	T
L2	6200005720	S.COIL	ELJRE 33NG-F	T
L3	6200005700	S.COIL	ELJRE 22NG-F	T
L4	6200009350	S.COIL	ELJRE R22G-F3	T
R1	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R2	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R3	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R4	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R9	7030005580	S.RESISTOR	ERJ2GEJ 560 X (56 Ω)	B
R10	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	B
R11	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R12	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R13	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R14	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	B
R15	7030009270	S.RESISTOR	ERJ2GEJ 821 X (820 Ω)	B
R16	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T

[2NDCVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
R17	7030008300	S.RESISTOR	ERJ2GEJ 184 X (180 kΩ)	T
R18	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R19	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R21	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R22	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	B
C1	4550006910	S.TANTALUM	TEESVP 1C 334M8R	T
C2	4030017390	S.CERAMIC	ECJ0EC1H180J	T
C3	4030017640	S.CERAMIC	ECJ0EC1H150J	T
C4	4030017620	S.CERAMIC	ECJ0EC1H100C	T
C5	4030017630	S.CERAMIC	ECJ0EC1H120J	T
C6	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C7	4030017570	S.CERAMIC	ECJ0EC1H040B	T
C8	4030017340	S.CERAMIC	ECJ0EC1H010B	T
C9	4030017380	S.CERAMIC	ECJ0EC1H050B	T
C10	4030017380	S.CERAMIC	ECJ0EC1H050B	T
C16	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C17	4030017380	S.CERAMIC	ECJ0EC1H050B	B
C18	4030017420	S.CERAMIC	ECJ0EC1H470J	B
C19	4030017420	S.CERAMIC	ECJ0EC1H470J	B
C20	4030017420	S.CERAMIC	ECJ0EC1H470J	B
C21	4550007150	S.TANTALUM	ECST0JZ475R	B
C22	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C23	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C24	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C25	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C26	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C27	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C30	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C31	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C32	4550007040	S.TANTALUM	ECST0JZ106R	T
C33	4030017350	S.CERAMIC	ECJ0EC1H020B	T
J1	6910010840	CONNECTOR	IMSA-9230B-1-05Z057-T	T
J2	6910014430	CONNECTOR	IMSA-9230B-1-06Z057-T	T
EP1	0910058183	PCB	B 6082C	

[2NDDVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC1	1130011670	S.IC	MB15E03SLPFV1-G-BND-ER	B
Q1	1530003610	S.TRANSISTOR	FH102-TL	T
Q3	1530003590	S.TRANSISTOR	2SC5277D2-TL	T
Q4	1530003630	S.TRANSISTOR	2SC4617 TLS	T
D1	1750000710	S.VARICAP	HVC350BTRF	T
L1	6200010850	S.COIL	LQW18AN22NG00D (LQW1608A22NG00)	T
L2	6200005740	S.COIL	ELJRE 47NG-F	T
L3	6200005700	S.COIL	ELJRE 22NG-F	T
L4	6200009350	S.COIL	ELJRE R22G-F3	T
R1	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R2	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R3	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R4	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R9	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R10	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	B
R11	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R12	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R13	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R14	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	B
R15	7030009270	S.RESISTOR	ERJ2GEJ 821 X (820 Ω)	B
R16	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R17	7030008300	S.RESISTOR	ERJ2GEJ 184 X (180 kΩ)	T
R18	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

[2NDDVCO BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
R19	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R21	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R22	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	B
C1	4550006910	S.TANTALUM	TEESVP 1C 334M8R	T
C2	4030017500	S.CERAMIC	ECJ0EC1H560J	T
C3	4030017400	S.CERAMIC	ECJ0EC1H220J	T
C4	4030017630	S.CERAMIC	ECJ0EC1H120J	T
C5	4030017650	S.CERAMIC	ECJ0EC1H270J	T
C6	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C7	4030017620	S.CERAMIC	ECJ0EC1H100C	T
C8	4030017570	S.CERAMIC	ECJ0EC1H040B	T
C9	4030017600	S.CERAMIC	ECJ0EC1H080C	T
C10	4030017600	S.CERAMIC	ECJ0EC1H080C	T
C16	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C17	4030017380	S.CERAMIC	ECJ0EC1H050B	B
C18	4030017420	S.CERAMIC	ECJ0EC1H470J	B
C19	4030017420	S.CERAMIC	ECJ0EC1H470J	B
C20	4030017420	S.CERAMIC	ECJ0EC1H470J	B
C21	4550007150	S.TANTALUM	ECST0JZ475R	B
C22	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C23	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C24	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C25	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C26	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C27	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C30	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C31	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C32	4550007040	S.TANTALUM	ECST0JZ106R	T
J1	6910010840	CONNECTOR	IMSA-9230B-1-05Z057-T	T
J2	6910014430	CONNECTOR	IMSA-9230B-1-06Z057-T	T
EP1	0910058193	PCB	B 6083C	

[DOWNCONV BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC2	1110005120	S.IC	μPC2749TB-E3	T
IC3	1110005230	S.IC	μPC2757TB-E3	T
IC4	1130011670	S.IC	MB15E03SLPFV1-G-BND-ER	B
Q1	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q2	1530003260	S.TRANSISTOR	2SC5006-T1	B
Q3	1590003380	S.TRANSISTOR	UNR9111J-(TX)	B
Q4	1530003780	S.TRANSISTOR	2SC5624VH-TL	T
Q5	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q6	1530003590	S.TRANSISTOR	2SC5277D2-TL	B
D1	1790001620	S.DIODE	1SV308 (TPL3)	T
D2	1790001620	S.DIODE	1SV308 (TPL3)	B
D3	1720000400	S.VARICAP	1SV245 (TPH3)	T
D5	1790001620	S.DIODE	1SV308 (TPL3)	T
D6	1790001620	S.DIODE	1SV308 (TPL3)	T
D7	1790001620	S.DIODE	1SV308 (TPL3)	T
D8	1790001620	S.DIODE	1SV308 (TPL3)	T
L1	6200005650	S.COIL	ELJRE 8N2Z-F	T
L2	6200005650	S.COIL	ELJRE 8N2Z-F	T
L3	6200004480	S.COIL	MLF1608D R82K-T	T
L4	6200010020	S.COIL	C2012C-12NG	T
L6	6200009350	S.COIL	ELJRE R22G-F3	T
L7	6200006770	S.COIL	ELJRE 1N5Z-F	T
L8	6200005640	S.COIL	ELJRE 6N8Z-F	T
L9	6200005610	S.COIL	ELJRE 3N9Z-F	T
L10	6200005580	S.COIL	ELJRE 2N2Z-F	T
L11	6200005640	S.COIL	ELJRE 6N8Z-F	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[DOWNCONV BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
R1	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω) except [EUR], [UK]	T
	7030009160	S.RESISTOR	ERJ2GEJ 181 X (180 Ω) [EUR], [UK]	T
R2	7030005000	S.RESISTOR	ERJ2GEJ 471 X (470 Ω)	T
R3	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	B
R4	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R5	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R6	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	B
R7	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R8	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R9	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R10	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R11	7030005300	S.RESISTOR	ERJ2GEJ 150 X (15 Ω)	T
R12	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	T
R13	7030005300	S.RESISTOR	ERJ2GEJ 150 X (15 Ω)	T
R14	7030005720	S.RESISTOR	ERJ2GEJ 563 X (56 kΩ)	B
R15	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	B
R16	7030007270	S.RESISTOR	ERJ2GEJ 151 X (150 Ω)	B
R17	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R18	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	B
R19	7030009270	S.RESISTOR	ERJ2GEJ 821 X (820 Ω)	B
R20	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	B
R21	7030005600	S.RESISTOR	ERJ2GEJ 273 X (27 kΩ)	T
R22	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R23	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R25	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R26	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R27	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R28	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	T
R29	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R30	7030008300	S.RESISTOR	ERJ2GEJ 184 X (180 kΩ)	B
R31	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R32	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R33	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
C1	4030017620	S.CERAMIC	ECJ0EC1H100C	T
C2	4030017600	S.CERAMIC	ECJ0EC1H080C	T
C3	4030017580	S.CERAMIC	ECJ0EC1H060C	T
C4	4030017600	S.CERAMIC	ECJ0EC1H080C	T
C5	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C6	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C7	4030017340	S.CERAMIC	ECJ0EC1H010B	T
C8	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C9	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C10	4030017340	S.CERAMIC	ECJ0EC1H010B	T
C11	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C12	4550007040	S.TANTALUM	ECST0JZ106R	T
C13	4030017400	S.CERAMIC	ECJ0EC1H220J	T
C14	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C15	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C16	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C17	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C18	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C19	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C21	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C22	4550006910	S.TANTALUM	TEESVP 1C 334M8R	T
C23	4550007070	S.TANTALUM	TEESVP 1A 475M8R	B
C26	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C27	4030017620	S.CERAMIC	ECJ0EC1H100C	T
C28	4030017340	S.CERAMIC	ECJ0EC1H010B	T
C29	4030017340	S.CERAMIC	ECJ0EC1H010B	T
C30	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C31	4030017630	S.CERAMIC	ECJ0EC1H120J	T
C32	4030017400	S.CERAMIC	ECJ0EC1H220J	T
C34	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C35	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C36	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C37	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C38	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C39	4030017340	S.CERAMIC	ECJ0EC1H010B	T
C40	4030017570	S.CERAMIC	ECJ0EC1H040B	T
C41	4030017640	S.CERAMIC	ECJ0EC1H150J	T
C42	4030017630	S.CERAMIC	ECJ0EC1H120J	T
C43	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C44	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C45	4030017360	S.CERAMIC	ECJ0EC1H030B	B
C46	4030017360	S.CERAMIC	ECJ0EC1H030B	B
C47	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C48	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C49	4030016790	S.CERAMIC	ECJ0EB1C103K	B

S.=Surface mount

[DOWNCONV BOARD]

REF NO.	ORDER NO.	DESCRIPTION	M.
C50	4030017730	S.CERAMIC ECJ0EB1E471K	B
C51	4030017730	S.CERAMIC ECJ0EB1E471K	B
C52	4030017730	S.CERAMIC ECJ0EB1E471K	B
C53	4030016790	S.CERAMIC ECJ0EB1C103K	B
C54	4030017420	S.CERAMIC ECJ0EC1H470J	B
C55	4030017420	S.CERAMIC ECJ0EC1H470J	B
C56	4030017420	S.CERAMIC ECJ0EC1H470J	T
C58	4030016930	S.CERAMIC ECJ0EB1A104K	T
J1	6910015510	CONNECTOR IMSA-9230B-1-08Z064-T	T
J2	6910015530	CONNECTOR IMSA-9230B-1-06Z064-T	T
EP1	0910058152	PCB B 6079B	

[REC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
IC1	1130011980	S.IC BD5228G-TR	T
IC2	1140012090	S.IC M30622M6P-131GP (RX-2699A ALL)	B
IC3	1130011680	S.IC FT245BM	T
IC4	1130012250	S.IC SN74AHC1G02DCKR	B
IC5	1130012260	S.IC SN74AHC1G32DCKR	B
IC6	1130011970	S.IC K9F5608UOC-YCBO <NXT>	B
IC7	1190001950	S.IC ML2302TB	T
IC8	1130011800	S.IC SN74AHC1G66HDBVR	T
IC9	1130011800	S.IC SN74AHC1G66HDBVR	T
IC10	1180002370	S.REG R1111N321B-TR	T
Q1	1590003300	S.TRANSISTOR UNR921NJ-(TX)	B
Q2	1590003510	S.TRANSISTOR UNR9119J-(TX)	B
X1	6050010940	S.XTAL CR-672 (6.000 MHz)	T
X2	6050011240	S.XTAL CR-708 (16.384 MHz)	T
R1	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	T
R6	7030009530	S.RESISTOR ERJ2GEJ 270 X (27 Ω)	T
R7	7030009530	S.RESISTOR ERJ2GEJ 270 X (27 Ω)	T
R8	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	T
R9	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	T
R10	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B
R11	7030005000	S.RESISTOR ERJ2GEJ 471 X (470 Ω)	T
R12	7030007280	S.RESISTOR ERJ2GEJ 331 X (330 Ω)	B
R13	7030005030	S.RESISTOR ERJ2GEJ 152 X (1.5 kΩ)	T
R15	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	T
R16	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	T
R17	7030005100	S.RESISTOR ERJ2GEJ 154 X (150 kΩ)	T
R18	7030005230	S.RESISTOR ERJ2GEJ 334 X (330 kΩ)	T
R19	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	T
R20	7030004980	S.RESISTOR ERJ2GEJ 101 X (100 Ω)	B
R21	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	T
R22	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	T
C1	4030016790	S.CERAMIC ECJ0EB1C103K	T
C2	4550006050	S.TANTALUM TEESVA 0J 106M8L	T
C3	4030016790	S.CERAMIC ECJ0EB1C103K	T
C4	4030016790	S.CERAMIC ECJ0EB1C103K	T
C5	4030016790	S.CERAMIC ECJ0EB1C103K	T
C6	4030017660	S.CERAMIC ECJ0EC1H330J	B
C7	4030017660	S.CERAMIC ECJ0EC1H330J	B
C8	4030017330	S.CERAMIC ECJ0EF1C104Z	T
C9	4030017040	S.CERAMIC ECJ0EB1A333K	T
C10	4030017330	S.CERAMIC ECJ0EF1C104Z	B
C11	4030016790	S.CERAMIC ECJ0EB1C103K	B
C12	4030016790	S.CERAMIC ECJ0EB1C103K	B
C13	4030016790	S.CERAMIC ECJ0EB1C103K	B
C14	4030016790	S.CERAMIC ECJ0EB1C103K	B
C15	4030016790	S.CERAMIC ECJ0EB1C103K	B
C16	4030016790	S.CERAMIC ECJ0EB1C103K	T
C17	4030017390	S.CERAMIC ECJ0EC1H180J	T

[REC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
C18	4030016790	S.CERAMIC ECJ0EB1C103K	T
C19	4030016790	S.CERAMIC ECJ0EB1C103K	T
C20	4030017400	S.CERAMIC ECJ0EC1H220J	T
C21	4030017400	S.CERAMIC ECJ0EC1H220J	T
C22	4030016790	S.CERAMIC ECJ0EB1C103K	T
C23	4030017490	S.CERAMIC C1608 JB 1A 105K-T	T
C24	4030017490	S.CERAMIC C1608 JB 1A 105K-T	T
C25	4030016790	S.CERAMIC ECJ0EB1C103K	T
C26	4030016790	S.CERAMIC ECJ0EB1C103K	T
C27	4550007130	S.TANTALUM ECST0GX107R	B
C28	4030016790	S.CERAMIC ECJ0EB1C103K	B
J2	6510024170	S.CONNECTOR CSS5005-0401GSZ	T
J6	6910006590	CONNECTOR IMSA-9230B-1-04Z030-T	T
J7	6910006520	CONNECTOR IMSA-9230B-1-06Z030-T	T
S1	2230001070	S.SWITCH JPM1990-2711R	T
S2	2230001070	S.SWITCH JPM1990-2711R	T
S3	2230001070	S.SWITCH JPM1990-2711R	T
EP1	6910012350	S.BEAD MMZ1608Y 102BT	T
EP2	0910058204	PCB B 6084D	
EP3	6910012350	S.BEAD MMZ1608Y 102BT	T
EP4	6910012350	S.BEAD MMZ1608Y 102BT	T

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
IC1	1130011140	S.IC CAT24WC256K1.8	B
IC2	1130011980	S.IC BD5228G-TR	B
IC3	1140012110	S.IC M30620MCP-130GP (RX-2699C USA) [USA]	B
	1140012100	S.IC M30620MCP-129GP (RX-2699B J/E) except [USA]	B
IC4	1130007110	S.IC TC7W04FU (TE12L)	B
IC5	1190000710	S.IC TA31056F (EL)	B
IC6	1130011870	S.IC SN74AHC1GU04DBVR	B
IC7	1130011860	S.IC SM6451BT-G-E2	B
IC8	1180002370	S.REG R1111N321B-TR	B
IC9	1180002370	S.REG R1111N321B-TR	B
IC11	1130007110	S.IC TC7W04FU (TE12L)	B
IC12	1110006380	S.IC LM2904PWR	B
IC13	1110006380	S.IC LM2904PWR	B
IC14	1130006550	S.IC TC7S08FU (TE85R)	B
IC15	1130006550	S.IC TC7S08FU (TE85R)	B
Q1	1530003630	S.TRANSISTOR 2SC4617 TLS	T
Q3	1510000770	S.TRANSISTOR 2SA1586-GR (TE85R)	B
Q4	1530003630	S.TRANSISTOR 2SC4617 TLS	T
Q5	1530003630	S.TRANSISTOR 2SC4617 TLS	B
Q6	1530002690	S.TRANSISTOR 2SC4116-GR (TE85R)	B
Q7	1590001170	S.TRANSISTOR XP1501-(TX) .AB	B
Q8	1510000670	S.TRANSISTOR 2SA1588-GR (TE85R)	B
Q9	1520000460	S.TRANSISTOR 2SB1132 T100 R	B
Q10	1510000580	S.TRANSISTOR 2SA1362-GR (TE85R)	B
Q11	1590003230	S.TRANSISTOR UNR9113J-(TX)	B
Q12	1530003630	S.TRANSISTOR 2SC4617 TLS	B
Q13	1590001190	S.TRANSISTOR XP6501-(TX) .AB	B
Q14	1510000670	S.TRANSISTOR 2SA1588-GR (TE85R)	B
Q15	1510000580	S.TRANSISTOR 2SA1362-GR (TE85R)	B
Q16	1530003630	S.TRANSISTOR 2SC4617 TLS	B
Q17	1510000670	S.TRANSISTOR 2SA1588-GR (TE85R)	B
Q19	1590001390	S.FET 2SJ144-Y (TE85R)	B
Q20	1590003250	S.TRANSISTOR UNR9115J-(TX)	B
Q21	1590003250	S.TRANSISTOR UNR9115J-(TX)	B
Q22	1530003630	S.TRANSISTOR 2SC4617 TLS	B
Q23	1530003630	S.TRANSISTOR 2SC4617 TLS	B
Q24	1590001190	S.TRANSISTOR XP6501-(TX) .AB	B
Q25	1590001190	S.TRANSISTOR XP6501-(TX) .AB	B
Q26	1590001390	S.FET 2SJ144-Y (TE85R)	B
Q27	1590001390	S.FET 2SJ144-Y (TE85R)	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
Q28	1530003630	S.TRANSISTOR 2SC4617 TLS	B
Q29	1590003290	S.TRANSISTOR UNR9213J-(TX)	B
Q30	1520000650	S.TRANSISTOR 2SB1201-S-TL	T
Q31	1590002950	S.FET HAT1023R-EL	T
Q32	1530003630	S.TRANSISTOR 2SC4617 TLS	T
Q33	1520000460	S.TRANSISTOR 2SB1132 T100 R	T
Q34	1590003390	S.TRANSISTOR UNR9215J-(TX)	T
Q35	1590003290	S.TRANSISTOR UNR9213J-(TX)	T
Q36	1530003630	S.TRANSISTOR 2SC4617 TLS	T
Q37	1510000670	S.TRANSISTOR 2SA1588-GR (TE85R)	B
Q38	1590001650	S.TRANSISTOR XP4601 (TX)	B
D2	1790001240	S.DIODE MA2S728-(TX) [SEA], [EXP-01], [EXP-02], [CAN] only	B
D3	1750000940	S.DIODE ISS400 TE61	T
D5	1790001240	S.DIODE MA2S728-(TX) [USA] only	B
D6	1750000940	S.DIODE ISS400 TE61	T
D8	1790001240	S.DIODE MA2S728-(TX) [UK], [USA] only	B
D9	1750000940	S.DIODE ISS400 TE61	T
D11	1790001240	S.DIODE MA2S728-(TX) [EUR] only	B
D12	1750000940	S.DIODE ISS400 TE61	T
D13	1750000940	S.DIODE ISS400 TE61	B
D14	1750000770	S.VARICAP HVC376BTRF	B
D18	1720000600	S.VARICAP HN2V02H-B (TE12R)	B
D20	1750000940	S.DIODE ISS400 TE61	B
D21	1750000940	S.DIODE ISS400 TE61	B
D22	1790001560	S.DIODE 1SS372 (TE85R)	B
D23	1790001560	S.DIODE 1SS372 (TE85R)	B
D24	1790001560	S.DIODE 1SS372 (TE85R)	B
D25	1790001560	S.DIODE 1SS372 (TE85R)	B
D26	1750000940	S.DIODE ISS400 TE61	T
D27	1750000940	S.DIODE ISS400 TE61	T
D28	1790001250	S.DIODE MA2S111-(TX)	T
D29	1790000670	S.DIODE SB07-03C-TB	T
D30	1750000940	S.DIODE ISS400 TE61	T
D31	1750000940	S.DIODE ISS400 TE61	T
D32	1790001250	S.DIODE MA2S111-(TX)	B
D33	1730002510	S.ZENER MA8027-H (TX)	B
D34	1790000670	S.DIODE SB07-03C-TB	T
D35	1790001240	S.DIODE MA2S728-(TX)	T
D36	1790000860	S.DIODE MA133 (TX)	T
X1	6050011310	S.XTAL CR-717 (9.8304 MHz)	B
X2	6060000820	S.CERAMIC CSBFB453KJ58-R1	B
L1	6200003640	S.COIL MLF1608E 100K-T	B
R1	7410001110	S.ARRAY EXB28V332JX	B
R2	7410001220	S.ARRAY EXB28V103JX	B
R3	7410001220	S.ARRAY EXB28V103JX	B
R4	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R5	7410001220	S.ARRAY EXB28V103JX	B
R6	7410001220	S.ARRAY EXB28V103JX	B
R7	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R8	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B
R9	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B
R10	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R11	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	B
R12	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	T
R13	7030005310	S.RESISTOR ERJ2GEJ 124 X (120 kΩ)	B
R14	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R15	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R17	7410001220	S.ARRAY EXB28V103JX	B
R18	7410001220	S.ARRAY EXB28V103JX	B
R19	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R20	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R21	7410001110	S.ARRAY EXB28V332JX	B
R22	7030010040	S.RESISTOR ERJ2GE-JPW	B
R23	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R24	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	B
R25	7410001110	S.ARRAY EXB28V332JX	B
R26	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	B
R27	7030005530	S.RESISTOR ERJ2GEJ 100 X (10 Ω)	B
R28	7030005160	S.RESISTOR ERJ2GEJ 105 X (1 MΩ)	B
R29	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R30	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	B
R31	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
R32	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	T
R33	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R34	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R35	7410001130	S.ARRAY EXB28V102JX	B
R36	7030005040	S.RESISTOR ERJ2GEJ 472 X (4.7 kΩ)	B
R38	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R39	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R40	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R41	7030008010	S.RESISTOR ERJ2GEJ 123 X (12 kΩ)	B
R42	7410001130	S.ARRAY EXB28V102JX	B
R43	7030007340	S.RESISTOR ERJ2GEJ 153 X (15 kΩ)	B
R45	7030005530	S.RESISTOR ERJ2GEJ 100 X (10 Ω)	B
R47	7030007320	S.RESISTOR ERJ2GEJ 225 X (2.2 MΩ)	B
R49	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R51	7410001130	S.ARRAY EXB28V102JX	B
R52	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R53	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R54	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R55	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R56	7030005040	S.RESISTOR ERJ2GEJ 472 X (4.7 kΩ)	B
R57	7030010040	S.RESISTOR ERJ2GE-JPW	B
R58	7030005100	S.RESISTOR ERJ2GEJ 154 X (150 kΩ)	B
R59	7030005100	S.RESISTOR ERJ2GEJ 154 X (150 kΩ)	B
R60	7030005100	S.RESISTOR ERJ2GEJ 154 X (150 kΩ)	B
R61	7030005100	S.RESISTOR ERJ2GEJ 154 X (150 kΩ)	B
R62	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R63	7410001220	S.ARRAY EXB28V103JX	B
R64	7030005000	S.RESISTOR ERJ2GEJ 471 X (470 Ω)	B
R66	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	B
R67	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	B
R68	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	B
R69	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R70	7030010040	S.RESISTOR ERJ2GE-JPW	B
R71	7030010040	S.RESISTOR ERJ2GE-JPW	B
R72	7030010040	S.RESISTOR ERJ2GE-JPW	B
R73	7030010040	S.RESISTOR ERJ2GE-JPW	B
R74	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B
R76	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B
R77	7410001130	S.ARRAY EXB28V102JX	B
R82	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B
R83	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B
R84	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R85	7030004980	S.RESISTOR ERJ2GEJ 101 X (100 Ω)	B
R86	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R87	7030007350	S.RESISTOR ERJ2GEJ 393 X (39 kΩ)	B
R88	7030005040	S.RESISTOR ERJ2GEJ 472 X (4.7 kΩ)	B
R89	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R90	7030005040	S.RESISTOR ERJ2GEJ 472 X (4.7 kΩ)	B
R91	7030009290	S.RESISTOR ERJ2GEJ 562 X (5.6 kΩ)	B
R93	7030005160	S.RESISTOR ERJ2GEJ 105 X (1 MΩ)	B
R94	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B
R95	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R96	7030005160	S.RESISTOR ERJ2GEJ 105 X (1 MΩ)	B
R97	7030005160	S.RESISTOR ERJ2GEJ 105 X (1 MΩ)	B
R98	7030005060	S.RESISTOR ERJ2GEJ 333 X (33 kΩ)	B
R99	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R100	7030010040	S.RESISTOR ERJ2GE-JPW	B
R101	7030009290	S.RESISTOR ERJ2GEJ 562 X (5.6 kΩ)	B
R103	7030005060	S.RESISTOR ERJ2GEJ 333 X (33 kΩ)	B
R104	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R105	7030005290	S.RESISTOR ERJ2GEJ 682 X (6.8 kΩ)	B
R106	7030010040	S.RESISTOR ERJ2GE-JPW	B
R107	7030005160	S.RESISTOR ERJ2GEJ 105 X (1 MΩ)	B
R108	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R110	7030005080	S.RESISTOR ERJ2GEJ 823 X (82 kΩ)	B
R111	7030010040	S.RESISTOR ERJ2GE-JPW	B
R112	7030005310	S.RESISTOR ERJ2GEJ 124 X (120 kΩ)	B
R113	7030005310	S.RESISTOR ERJ2GEJ 124 X (120 kΩ)	B
R114	7030007320	S.RESISTOR ERJ2GEJ 225 X (2.2 MΩ)	B
R115	7030008010	S.RESISTOR ERJ2GEJ 123 X (12 kΩ)	B
R116	7030008010	S.RESISTOR ERJ2GEJ 123 X (12 kΩ)	B
R117	7030005160	S.RESISTOR ERJ2GEJ 105 X (1 MΩ)	B
R118	7030005530	S.RESISTOR ERJ2GEJ 100 X (10 Ω)	B
R119	7030008010	S.RESISTOR ERJ2GEJ 123 X (12 kΩ)	B
R120	7030009270	S.RESISTOR ERJ2GEJ 821 X (820 Ω)	B
R121	7030005530	S.RESISTOR ERJ2GEJ 100 X (10 Ω)	B
R122	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R123	7030009270	S.RESISTOR ERJ2GEJ 821 X (820 Ω)	B
R124	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R125	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R126	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
R127	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R128	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R129	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R130	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R131	7030009150	S.RESISTOR ERJ2GEJ 824 X (820 kΩ)	B
R132	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R133	7030009150	S.RESISTOR ERJ2GEJ 824 X (820 kΩ)	B
R134	7030005080	S.RESISTOR ERJ2GEJ 823 X (82 kΩ)	B
R135	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R136	7030005080	S.RESISTOR ERJ2GEJ 823 X (82 kΩ)	B
R137	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R139	7030005080	S.RESISTOR ERJ2GEJ 823 X (82 kΩ)	B
R140	7030005080	S.RESISTOR ERJ2GEJ 823 X (82 kΩ)	B
R141	7030007340	S.RESISTOR ERJ2GEJ 153 X (15 kΩ)	B
R142	7030007340	S.RESISTOR ERJ2GEJ 153 X (15 kΩ)	B
R143	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R144	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R145	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R146	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R147	7030007320	S.RESISTOR ERJ2GEJ 225 X (2.2 MΩ)	B
R148	7030005100	S.RESISTOR ERJ2GEJ 154 X (150 kΩ)	B
R149	7030007350	S.RESISTOR ERJ2GEJ 393 X (39 kΩ)	B
R150	7030005100	S.RESISTOR ERJ2GEJ 154 X (150 kΩ)	B
R151	7030007350	S.RESISTOR ERJ2GEJ 393 X (39 kΩ)	B
R152	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R153	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R154	7030007320	S.RESISTOR ERJ2GEJ 225 X (2.2 MΩ)	B
R155	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R156	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R157	7030005080	S.RESISTOR ERJ2GEJ 823 X (82 kΩ)	B
R158	7030007320	S.RESISTOR ERJ2GEJ 225 X (2.2 MΩ)	B
R159	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R160	7030007320	S.RESISTOR ERJ2GEJ 225 X (2.2 MΩ)	B
R161	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R162	7030005080	S.RESISTOR ERJ2GEJ 823 X (82 kΩ)	B
R163	7030005160	S.RESISTOR ERJ2GEJ 105 X (1 MΩ)	B
R164	7030005160	S.RESISTOR ERJ2GEJ 105 X (1 MΩ)	B
R165	7030007350	S.RESISTOR ERJ2GEJ 393 X (39 kΩ)	B
R166	7030007350	S.RESISTOR ERJ2GEJ 393 X (39 kΩ)	B
R167	7030005050	S.RESISTOR ERJ2GEJ 103 X (10 kΩ)	B
R168	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R169	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R170	7030007320	S.RESISTOR ERJ2GEJ 225 X (2.2 MΩ)	B
R172	7030007320	S.RESISTOR ERJ2GEJ 225 X (2.2 MΩ)	B
R174	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R175	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R176	7030006610	S.RESISTOR ERJ2GEJ 394 X (390 kΩ)	B
R177	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R178	7030006610	S.RESISTOR ERJ2GEJ 394 X (390 kΩ)	B
R179	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	B
R180	7030005240	S.RESISTOR ERJ2GEJ 473 X (47 kΩ)	B
R181	7030005590	S.RESISTOR ERJ2GEJ 680 X (68 Ω)	T
R182	7030007570	S.RESISTOR ERJ2GEJ 122 X (1.2 kΩ)	T
R183	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	T
R184	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R185	7030003210	S.RESISTOR ERJ3GEYJ 120 V (12 Ω)	T
R186	7030003210	S.RESISTOR ERJ3GEYJ 120 V (12 Ω)	T
R187	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	T
R188	7030007270	S.RESISTOR ERJ2GEJ 151 X (150 Ω)	T
R189	7030005120	S.RESISTOR ERJ2GEJ 102 X (1 kΩ)	T
R190	7510001470	S.THERMISTOR NTCG20 4AG 473JT	B
R191	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R192	7030008300	S.RESISTOR ERJ2GEJ 184 X (180 kΩ)	T
R193	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	T
R194	7030005871	S.RESISTOR ERA3YKD 104V (100 kΩ)	T
R195	7030008051	S.RESISTOR ERA3YKD 184V (180 kΩ)	T
R196	7030000120	S.RESISTOR MCR10EZHJ 6.8 Ω (6R8)	T
R197	7030000120	S.RESISTOR MCR10EZHJ 6.8 Ω (6R8)	T
R198	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	T
R199	7030004990	S.RESISTOR ERJ2GEJ 221 X (220 Ω)	T
R200	7030005210	S.RESISTOR ERJ2GEJ 822 X (8.2 kΩ)	B
R201	7030005170	S.RESISTOR ERJ2GEJ 474 X (470 kΩ)	B
R202	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	T
R203	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	B
R204	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	B
R205	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	B
R206	7030005570	S.RESISTOR ERJ2GEJ 820 X (82 Ω)	B
R207	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R208	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R209	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
R210	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
R211	7030005000	S.RESISTOR ERJ2GEJ 471 X (470 Ω)	B
R212	7030005000	S.RESISTOR ERJ2GEJ 471 X (470 Ω)	B
R213	7030010040	S.RESISTOR ERJ2GE-JPW	B
R214	7030010040	S.RESISTOR ERJ2GE-JPW	B
R215	7030010040	S.RESISTOR ERJ2GE-JPW	B
R216	7030010040	S.RESISTOR ERJ2GE-JPW	B
R217	7030005090	S.RESISTOR ERJ2GEJ 104 X (100 kΩ)	B
C1	4030016930	S.CERAMIC ECJ0EB1A104K	B
C2	4030017460	S.CERAMIC ECJ0EB1E102K	B
C3	4030017460	S.CERAMIC ECJ0EB1E102K	B
C4	4030017460	S.CERAMIC ECJ0EB1E102K	B
C5	4030017460	S.CERAMIC ECJ0EB1E102K	B
C6	4030017460	S.CERAMIC ECJ0EB1E102K	B
C7	4030016790	S.CERAMIC ECJ0EB1C103K	B
C8	4030017460	S.CERAMIC ECJ0EB1E102K	B
C9	4030017460	S.CERAMIC ECJ0EB1E102K	B
C10	4030017460	S.CERAMIC ECJ0EB1E102K	B
C11	4030017460	S.CERAMIC ECJ0EB1E102K	B
C12	4030017460	S.CERAMIC ECJ0EB1E102K	B
C13	4030016930	S.CERAMIC ECJ0EB1A104K	B
C14	4030017460	S.CERAMIC ECJ0EB1E102K	B
C16	4030017460	S.CERAMIC ECJ0EB1E102K	B
C18	4030017420	S.CERAMIC ECJ0EC1H470J	T
C19	4030017420	S.CERAMIC ECJ0EC1H470J	T
C20	4030017420	S.CERAMIC ECJ0EC1H470J	T
C21	4030017420	S.CERAMIC ECJ0EC1H470J	T
C22	4030017640	S.CERAMIC ECJ0EC1H150J	B
C23	4030016930	S.CERAMIC ECJ0EB1A104K	B
C24	4030017460	S.CERAMIC ECJ0EB1E102K	B
C26	4030017460	S.CERAMIC ECJ0EB1E102K	B
C27	4030016790	S.CERAMIC ECJ0EB1C103K	B
C28	4030017730	S.CERAMIC ECJ0EB1E471K	B
C29	4030016930	S.CERAMIC ECJ0EB1A104K	T
C30	4030018870	S.CERAMIC ECJ0EF0J105Z	B
C31	4550006140	S.TANTALUM ECST1EY474R	B
C33	4030017460	S.CERAMIC ECJ0EB1E102K	T
C34	4550006550	S.TANTALUM TEESVD 0G 227M12R	B
C35	4030018870	S.CERAMIC ECJ0EF0J105Z	B
C36	4030017680	S.CERAMIC ECJ0EC1H820J	T
C37	4030017420	S.CERAMIC ECJ0EC1H470J	B
C38	4550006340	S.TANTALUM ECST1AY335R	B
C39	4030016930	S.CERAMIC ECJ0EB1A104K	B
C40	4510007970	S.ELECTROLYTIC ECEV1AA330WR	B
C41	4030016930	S.CERAMIC ECJ0EB1A104K	B
C42	4030017430	S.CERAMIC ECJ0EC1H101J	B
C43	4550006320	S.TANTALUM ECST0JY475R	B
C44	4550006320	S.TANTALUM ECST0JY475R	B
C45	4030016930	S.CERAMIC ECJ0EB1A104K	B
C46	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C47	4030016930	S.CERAMIC ECJ0EB1A104K	B
C48	4030017460	S.CERAMIC ECJ0EB1E102K	B
C49	4030016930	S.CERAMIC ECJ0EB1A104K	B
C50	4030016930	S.CERAMIC ECJ0EB1A104K	B
C51	4030017460	S.CERAMIC ECJ0EB1E102K	B
C52	4030017460	S.CERAMIC ECJ0EB1E102K	B
C53	4030016790	S.CERAMIC ECJ0EB1C103K	B
C54	4030016930	S.CERAMIC ECJ0EB1A104K	B
C55	4030017460	S.CERAMIC ECJ0EB1E102K	B
C56	4030016790	S.CERAMIC ECJ0EB1C103K	B
C57	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C58	4030016930	S.CERAMIC ECJ0EB1A104K	B
C59	4030017460	S.CERAMIC ECJ0EB1E102K	B
C60	4030016930	S.CERAMIC ECJ0EB1A104K	B
C61	4030017460	S.CERAMIC ECJ0EB1E102K	B
C62	4550006320	S.TANTALUM ECST0JY475R	B
C63	4030017460	S.CERAMIC ECJ0EB1E102K	B
C64	4030017460	S.CERAMIC ECJ0EB1E102K	B
C65	4030016790	S.CERAMIC ECJ0EB1C103K	B
C66	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C67	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C68	4030017460	S.CERAMIC ECJ0EB1E102K	B
C69	4030017460	S.CERAMIC ECJ0EB1E102K	B
C70	4550006700	S.TANTALUM ECST1AY106R	B
C71	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C72	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C73	4030016790	S.CERAMIC ECJ0EB1C103K	B
C74	4030017730	S.CERAMIC ECJ0EB1E471K	B
C75	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B
C76	4030017490	S.CERAMIC C1608 JB 1A 105K-T	B

S.=Surface mount

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C77	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C78	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C79	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C80	4550006700	S.TANTALUM	ECST1AY106R	B
C81	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C82	4550006620	S.TANTALUM	ECST0JY226R	B
C83	4550006620	S.TANTALUM	ECST0JY226R	B
C84	4030017780	S.CERAMIC	ECJ0EB1E472K	B
C85	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C86	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C87	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C88	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C89	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C90	4550006540	S.TANTALUM	ECST1CY475R	B
C91	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C92	4030017760	S.CERAMIC	ECJ0EB1H222K	B
C93	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C94	4030017760	S.CERAMIC	ECJ0EB1H222K	B
C95	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C96	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C97	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C98	4550006540	S.TANTALUM	ECST1CY475R	B
C99	4030016970	S.CERAMIC	ECJ0EB1C223K	B
C100	4030016970	S.CERAMIC	ECJ0EB1C223K	B
C101	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C102	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C103	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C104	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C105	4550006540	S.TANTALUM	ECST1CY475R	B
C106	4510008040	S.ELECTROLYTIC	EEFCD 0K 330R	B
C107	4550006210	S.TANTALUM	ECST1CX106R	B
C108	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C109	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C110	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C111	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C112	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C113	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C114	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C115	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C116	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C117	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C118	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C119	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C120	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C122	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C123	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C124	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C125	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C126	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C127	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C128	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C131	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C132	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C133	4030017740	S.CERAMIC	ECJ0EB1E821K	B
C134	4030017740	S.CERAMIC	ECJ0EB1E821K	B
C135	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C136	4030017450	S.CERAMIC	ECJ0EB1E271K	B
C137	4030017450	S.CERAMIC	ECJ0EB1E271K	B
C138	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C139	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C140	4030017430	S.CERAMIC	ECJ0EC1H101J	B
C141	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C142	4030017430	S.CERAMIC	ECJ0EC1H101J	B
C143	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C144	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C145	4030016780	S.CERAMIC	ECJ0EB1C153K	B
C146	4030016780	S.CERAMIC	ECJ0EB1C153K	B
C147	4030018100	S.CERAMIC	ECJ0EB1H681K	B
C148	4030018100	S.CERAMIC	ECJ0EB1H681K	B
C149	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C150	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C151	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C152	4030008680	S.CERAMIC	C2012 JF 1C 105Z-T	B
C153	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C154	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C155	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C156	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C157	4030017730	S.CERAMIC	ECJ0EB1E471K	B
C158	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C159	4550006540	S.TANTALUM	ECST1CY475R	B
C160	4030017720	S.CERAMIC	ECJ0EB1H331K	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C161	4030017720	S.CERAMIC	ECJ0EB1H331K	B
C162	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	B
C163	4030017720	S.CERAMIC	ECJ0EB1H331K	B
C164	4030017720	S.CERAMIC	ECJ0EB1H331K	B
C165	4030017760	S.CERAMIC	ECJ0EB1H222K	B
C166	4030018080	S.CERAMIC	ECJ0EB1H182K	B
C167	4030017760	S.CERAMIC	ECJ0EB1H222K	B
C168	4030018080	S.CERAMIC	ECJ0EB1H182K	B
C169	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C170	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C171	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C172	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C173	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C174	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C175	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C176	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C177	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C178	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C179	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C180	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C181	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C182	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C183	4030017780	S.CERAMIC	ECJ0EB1E472K	T
C184	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C185	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C186	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C187	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C188	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C189	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C190	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C191	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C192	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C193	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C194	4030017490	S.CERAMIC	C1608 JB 1A 105K-T	B
C196	4030016930	S.CERAMIC	ECJ0EB1A104K	T
J3	6450002250	CONNECTOR	HSJ1456-010320	B
J5	6510022150	S.CONNECTOR	AXN340C130P	B
J6	6450002130	CONNECTOR	04-730A2-02BKA	B
J8	6510021900	S.CONNECTOR	BM02B-ASRS-TF	T
J9	6510024220	S.CONNECTOR	23FLZ-RSM1-TB	B
DS1	5040002930	S.LED	SML-512MW T86	T
DS2	5040002930	S.LED	SML-512MW T86	T
DS3	5040002930	S.LED	SML-512MW T86	T
DS4	5040002930	S.LED	SML-512MW T86	T
DS5	5040002930	S.LED	SML-512MW T86	T
DS6	5040002930	S.LED	SML-512MW T86	T
DS7	5040002930	S.LED	SML-512MW T86	T
DS8	5040002930	S.LED	SML-512MW T86	T
DS9	5040002930	S.LED	SML-512MW T86	T
DS11	5040002990	S.LED	SML-512UWT86	T
DS12	5030002690	LCD	M3-0243TIY	T
S24	2250000200	ENCODER	TP90N00E20-16F-1517	B
S25	2250000200	ENCODER	TP90N00E20-16F-1517	B
EP1	6910012350	S.BEAD	MMZ1608Y 102BT	T
EP2	6910012350	S.BEAD	MMZ1608Y 102BT	T
EP3	6910012350	S.BEAD	MMZ1608Y 102BT	T
EP4	6910012350	S.BEAD	MMZ1608Y 102BT	T
EP6	6910014680	S.BEAD	MMZ1608Y 121BT	B
EP7	6910013310	S.BEAD	MMZ1608D121B	T
EP8	6910014680	S.BEAD	MMZ1608Y 121BT	B
EP9	6910014690	S.BEAD	MPZ1608S221A-T	T
EP10	6910014690	S.BEAD	MPZ1608S221A-T	T
EP12	6910015960	E.OTHER	CV1081 RX2699	
EP13	6910016220	S.BEAD	MZA2010D121C	B
EP14	0910058133	PCB	B 6077C	

S.=Surface mount

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC1	1110005230	S.IC	μPC2757TB-E3	T
IC2	1110003200	S.IC	TA31136FN (EL)	T
IC10	1110005230	S.IC	μPC2757TB-E3	T
IC12	1130011770	S.IC	CD4066BPWR	B
IC14	1110006360	S.IC	M62366GP D60J	T
IC15	1110005230	S.IC	μPC2757TB-E3	T
IC16	1110005230	S.IC	μPC2757TB-E3	T
IC17	1110003200	S.IC	TA31136FN (EL)	T
IC18	1110005180	S.IC	μPC2746TB-E3	T
IC19	1110005180	S.IC	μPC2746TB-E3	T
IC20	1110006360	S.IC	M62366GP D60J	T
IC21	1130011770	S.IC	CD4066BPWR	T
IC22	1130011760	S.IC	CD4094BPWR	B
Q1	1590001190	S.TRANSISTOR	XP6501-(TX) .AB	B
Q4	1590001190	S.TRANSISTOR	XP6501-(TX) .AB	B
Q5	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q14	1530003260	S.TRANSISTOR	2SC5006-T1	B
Q24	1530003810	S.TRANSISTOR	2SC5008-T1	T
Q26	1530003780	S.TRANSISTOR	2SC5624VH-TL	T
Q35	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q36	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q41	1590003230	S.TRANSISTOR	UNR9113J-(TX)	T
Q44	1590001660	S.TRANSISTOR	XP4312 (TX)	B
Q501	1590003230	S.TRANSISTOR	UNR9113J-(TX)	B
Q502	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q503	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q504	1590001680	S.TRANSISTOR	XP1110 (TX)	B
Q505	1530002880	S.TRANSISTOR	2SC4226-T1 R24	B
Q506	1590003410	S.TRANSISTOR	UNR9110J-(TX)	B
Q507	1530003810	S.TRANSISTOR	2SC5008-T1	B
Q508	1590001660	S.TRANSISTOR	XP4312 (TX)	B
Q509	1590003230	S.TRANSISTOR	UNR9113J-(TX)	B
Q510	1590001540	S.TRANSISTOR	UMD6N TR	B
Q513	1590001650	S.TRANSISTOR	XP4601 (TX)	B
Q519	1590003230	S.TRANSISTOR	UNR9113J-(TX)	B
Q521	1530003630	S.TRANSISTOR	2SC4617 TLS	T
Q522	1530003630	S.TRANSISTOR	2SC4617 TLS	T
Q523	1530003630	S.TRANSISTOR	2SC4617 TLS	T
Q524	1530003630	S.TRANSISTOR	2SC4617 TLS	T
Q525	1590001190	S.TRANSISTOR	XP6501-(TX) .AB	T
Q526	1590003230	S.TRANSISTOR	UNR9113J-(TX)	T
Q527	1590003230	S.TRANSISTOR	UNR9113J-(TX)	T
Q528	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q529	1590003290	S.TRANSISTOR	UNR9213J-(TX)	B
Q530	1530003630	S.TRANSISTOR	2SC4617 TLS	T
Q531	1530003630	S.TRANSISTOR	2SC4617 TLS	T
Q532	1560000810	S.FET	2SK1069-4-TL	T
Q534	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q535	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q540	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q542	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q543	1590003230	S.TRANSISTOR	UNR9113J-(TX)	T
Q544	1590001190	S.TRANSISTOR	XP6501-(TX) .AB	B
Q545	1590001190	S.TRANSISTOR	XP6501-(TX) .AB	B
Q546	1590001660	S.TRANSISTOR	XP4312 (TX)	B
Q547	1590003290	S.TRANSISTOR	UNR9213J-(TX)	B
Q548	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q549	1530003260	S.TRANSISTOR	2SC5006-T1	B
Q550	1530003610	S.TRANSISTOR	FH102-TL	B
Q551	1590002650	S.TRANSISTOR	UPA805T-T1	T
Q552	1590003230	S.TRANSISTOR	UNR9113J-(TX)	T
Q553	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q554	1590001810	S.TRANSISTOR	XP1113 (TX)	B
Q555	1530003260	S.TRANSISTOR	2SC5006-T1	T
Q556	1530003630	S.TRANSISTOR	2SC4617 TLS	T
D1	1750000710	S.VARICAP	HVC350BTRF	B
D2	1750000710	S.VARICAP	HVC350BTRF	B
D3	1790001620	S.DIODE	1SV308 (TPL3)	T
D4	1750000710	S.VARICAP	HVC350BTRF	T
D5	1750000710	S.VARICAP	HVC350BTRF	T
D11	1790001620	S.DIODE	1SV308 (TPL3)	T
D13	1790001620	S.DIODE	1SV308 (TPL3)	T
D25	1790001620	S.DIODE	1SV308 (TPL3)	B
D29	1790001620	S.DIODE	1SV308 (TPL3)	T
D32	1790001620	S.DIODE	1SV308 (TPL3)	T
D34	1790001620	S.DIODE	1SV308 (TPL3)	T
D36	1790001620	S.DIODE	1SV308 (TPL3)	T

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
D57	1790001240	S.DIODE	MA2S728-(TX)	B
D58	1790001260	S.DIODE	MA2S077-(TX)	T
D59	1790001260	S.DIODE	MA2S077-(TX)	T
D60	1790001260	S.DIODE	MA2S077-(TX)	T
D61	1790001260	S.DIODE	MA2S077-(TX)	T
D64	1790001620	S.DIODE	1SV308 (TPL3)	B
D65	1790001620	S.DIODE	1SV308 (TPL3)	B
D66	1790001620	S.DIODE	1SV308 (TPL3)	B
D67	1790001620	S.DIODE	1SV308 (TPL3)	B
D68	1720000240	S.DIODE	1SV172 (TE85R)	B
D69	1790001620	S.DIODE	1SV308 (TPL3)	B
D70	1790001620	S.DIODE	1SV308 (TPL3)	B
D72	1790001620	S.DIODE	1SV308 (TPL3)	B
D73	1790001620	S.DIODE	1SV308 (TPL3)	B
D74	1790001620	S.DIODE	1SV308 (TPL3)	B
D75	1790001620	S.DIODE	1SV308 (TPL3)	T
D76	1790001260	S.DIODE	MA2S077-(TX)	B
D100	1720000820	S.VARICAP	SVC347S/T-TL	B
D101	1790001260	S.DIODE	MA2S077-(TX)	T
D106	1750000940	S.DIODE	ISS400 TE61	B
D107	1750000940	S.DIODE	ISS400 TE61	B
D108	1750000940	S.DIODE	ISS400 TE61	T
D109	1750000940	S.DIODE	ISS400 TE61	T
D110	1750000940	S.DIODE	ISS400 TE61	T
D111	1750000940	S.DIODE	ISS400 TE61	T
D112	1750000940	S.DIODE	ISS400 TE61	T
D113	1750000940	S.DIODE	ISS400 TE61	T
D114	1790001240	S.DIODE	MA2S728-(TX)	B
D115	1790001790	S.DIODE	RB876W TL	T
D116	1790001790	S.DIODE	RB876W TL	T
D117	1160000140	S.DIODE	DAP222 TL	B
D119	1160000140	S.DIODE	DAP222 TL	B
D121	1160000140	S.DIODE	DAP222 TL	B
D130	1790001260	S.DIODE	MA2S077-(TX)	T
D131	1790001260	S.DIODE	MA2S077-(TX)	T
D132	1790001260	S.DIODE	MA2S077-(TX)	T
D133	1790001260	S.DIODE	MA2S077-(TX)	T
D134	1750000940	S.DIODE	ISS400 TE61	T
D135	1750000940	S.DIODE	ISS400 TE61	T
D136	1750000940	S.DIODE	ISS400 TE61	T
D137	1750000940	S.DIODE	ISS400 TE61	T
D138	1790001240	S.DIODE	MA2S728-(TX)	B
D139	1790001240	S.DIODE	MA2S728-(TX)	B
D141	1750000710	S.VARICAP	HVC350BTRF	T
D142	1750000710	S.VARICAP	HVC350BTRF	T
D143	1790001620	S.DIODE	1SV308 (TPL3)	T
D145	1750000710	S.VARICAP	HVC350BTRF	B
D146	1750000710	S.VARICAP	HVC350BTRF	B
D147	1790001620	S.DIODE	1SV308 (TPL3)	B
D148	1790001240	S.DIODE	MA2S728-(TX)	B
D149	1790001240	S.DIODE	MA2S728-(TX)	B
D150	1790001240	S.DIODE	MA2S728-(TX)	T
D151	1790001240	S.DIODE	MA2S728-(TX)	T
D152	1790001240	S.DIODE	MA2S728-(TX)	B
D153	1790001240	S.DIODE	MA2S728-(TX)	T
D154	1790001240	S.DIODE	MA2S728-(TX)	T
D155	1790001240	S.DIODE	MA2S728-(TX)	T
D156	1790001240	S.DIODE	MA2S728-(TX)	T
D157	1790001240	S.DIODE	MA2S728-(TX)	T
D158	1790001240	S.DIODE	MA2S728-(TX)	T
D159	1790001240	S.DIODE	MA2S728-(TX)	T
D160	1790001240	S.DIODE	MA2S728-(TX)	T
D161	1790001240	S.DIODE	MA2S728-(TX)	B
D162	1790001240	S.DIODE	MA2S728-(TX)	B
D163	1790001240	S.DIODE	MA2S728-(TX)	B
D164	1790001240	S.DIODE	MA2S728-(TX)	B
D165	1790001240	S.DIODE	MA2S728-(TX)	T
D166	1790001240	S.DIODE	MA2S728-(TX)	B
D167	1790001240	S.DIODE	MA2S728-(TX)	T
D168	1790001240	S.DIODE	MA2S728-(TX)	T
D169	1790001240	S.DIODE	MA2S728-(TX)	B
D170	1790001240	S.DIODE	MA2S728-(TX)	B
D171	1750000710	S.VARICAP	HVC350BTRF	T
D172	1790001240	S.DIODE	MA2S728-(TX)	T
D173	1750000720	S.VARICAP	HVC375BTRF	T
D174	1750000720	S.VARICAP	HVC375BTRF	T
D175	1750000720	S.VARICAP	HVC375BTRF	T
D176	1750000720	S.VARICAP	HVC375BTRF	T
D178	1750000940	S.DIODE	ISS400 TE61	T
D179	1750000940	S.DIODE	ISS400 TE61	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
FI1	2040001200	S.SAW	EFCH266MKQP1	T
FI2	2020001270	CERAMIC	CFWLB450KE2A-B0 (CFWM450E)	B
FI3	2010002280	S.MONOLITH	FL-293 (19.650 MHz)	T
FI4	2040001190	S.SAW	EFCH429MKQP1	T
FI6	2020001470	CERAMIC	CFWLA450KL6A002-B0 (CFWS450K3)	B
FI7	2010002280	S.MONOLITH	FL-293 (19.650 MHz)	T
FI8	2020001270	CERAMIC	CFWLB450KE2A-B0 (CFWM450E)	B
X1	6050010210	S.XTAL	CR-593 (19.200 MHz)	T
L1	6200005740	S.COIL	ELJRE 47NG-F	B
L3	6200005680	S.COIL	ELJRE 15NG-F	T
L4	6200005700	S.COIL	ELJRE 22NG-F	T
L5	6200005680	S.COIL	ELJRE 15NG-F	T
L9	6200005720	S.COIL	ELJRE 33NG-F	T
L10	6200005700	S.COIL	ELJRE 22NG-F	T
L11	6200005680	S.COIL	ELJRE 15NG-F	T
L12	6200005660	S.COIL	ELJRE 10NG-F	T
L13	6200005630	S.COIL	ELJRE 5N6Z-F	T
L15	6200005740	S.COIL	ELJRE 47NG-F	T
L17	6200007170	S.COIL	MLF1608A 3R3K-T	T
L21	6150004840	S.COIL	LS-510	B
L28	6200006670	S.COIL	ELJRE 68NG-F	B
L39	6200005730	S.COIL	ELJRE 39NG-F	T
L41	6200006980	S.COIL	ELJRE R10G-F	T
L43	6200006770	S.COIL	ELJRE 1N5Z-F	T
L44	6200005620	S.COIL	ELJRE 4N7Z-F	T
L56	6200005640	S.COIL	ELJRE 6N8Z-F	T
L60	6200008570	S.COIL	LQW2BHN6N8D01L (LQN21A 6N8D04)	T
L61	6200008570	S.COIL	LQW2BHN6N8D01L (LQN21A 6N8D04)	T
L70	6200004720	S.COIL	MLF1608D R10K-T	B
L73	6200006960	S.COIL	MLF1608A 2R7K-T	T
L74	6200005740	S.COIL	ELJRE 47NG-F	T
L81	6200004940	S.COIL	MLF1608D R27K-T	B
L82	6200005140	S.COIL	MLF1608D R33K-T	B
L83	6200004790	S.COIL	MLF1608D R47K-T	B
L84	6200003630	S.COIL	MLF1608D R68K-T	B
L85	6200006970	S.COIL	MLF1608A 3R9K-T	B
L86	6200003630	S.COIL	MLF1608D R68K-T	B
L87	6200003960	S.COIL	MLF1608A 1R0K-T	B
L88	6200006710	S.COIL	MLF1608E 5R6K 5.6U	B
L89	6200003640	S.COIL	MLF1608E 100K-T	B
L90	6200002040	S.COIL	NL 252018T-101J	B
L91	6200006970	S.COIL	MLF1608A 3R9K-T	B
L92	6200005180	S.COIL	MLF1608D R39K-T	T
L93	6200005700	S.COIL	ELJRE 22NG-F	T
L94	6200005720	S.COIL	ELJRE 33NG-F	T
L95	6200005680	S.COIL	ELJRE 15NG-F	T
L99	6200005500	S.COIL	NL 322522T-471J	T
L101	6200005640	S.COIL	ELJRE 6N8Z-F	T
L102	6200006960	S.COIL	MLF1608A 2R7K-T	T
L104	6200007170	S.COIL	MLF1608A 3R3K-T	T
L105	6150004840	S.COIL	LS-510	B
L106	6200005500	S.COIL	NL 322522T-471J	T
L112	6200008570	S.COIL	LQW2BHN6N8D01L (LQN21A 6N8D04)	T
L113	6200008570	S.COIL	LQW2BHN6N8D01L (LQN21A 6N8D04)	T
L119	6200006670	S.COIL	ELJRE 68NG-F	B
L120	6200005740	S.COIL	ELJRE 47NG-F	B
L121	6200009100	S.COIL	ELJRE R18G-F	B
L122	6200007740	S.COIL	LQW2BHN47NJ01L (LQN21A 47NJ04)	T
L123	6200009290	S.COIL	LQW18AN47NG00D (LQW1608A47NG00)	T
L124	6200010910	S.COIL	LQW18AN56NG00D	T
L125	6200009290	S.COIL	LQW18AN47NG00D (LQW1608A47NG00)	T
L126	6200009070	S.COIL	LQW18AN18NG00D (LQW1608A18NG00)	T
L127	6200009070	S.COIL	LQW18AN18NG00D (LQW1608A18NG00)	T
L128	6200006980	S.COIL	ELJRE R10G-F	B
L129	6200005610	S.COIL	ELJRE 3N9Z-F	T
L130	6200005610	S.COIL	ELJRE 3N9Z-F	T
L131	6200005610	S.COIL	ELJRE 3N9Z-F	T
L132	6200005610	S.COIL	ELJRE 3N9Z-F	T
L133	6200006990	S.COIL	ELJRE 56NG-F	T
L134	6200003550	S.COIL	MLF1608A 4R7K-T	T
R4	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R6	7030005710	S.RESISTOR	ERJ2GEJ 121 X (120 Ω)	T
R8	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	B
R9	7030005310	S.RESISTOR	ERJ2GEJ 124 X (120 kΩ)	B
R10	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R11	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	B
R13	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	T
R14	7030005070	S.RESISTOR	ERJ2GEJ 683 X (68 kΩ)	T
R15	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R16	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R18	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	T
R19	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R20	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R26	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	B
R28	7030005160	S.RESISTOR	ERJ2GEJ 105 X (1 MΩ)	B
R29	7030005170	S.RESISTOR	ERJ2GEJ 474 X (470 kΩ)	B
R30	7030007300	S.RESISTOR	ERJ2GEJ 332 X (3.3 kΩ)	B
R31	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R34	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R35	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	T
R36	7030005110	S.RESISTOR	ERJ2GEJ 224 X (220 kΩ)	T
R46	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R49	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R50	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R54	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	T
R55	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R56	7030005000	S.RESISTOR	ERJ2GEJ 471 X (470 Ω)	T
R57	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	T
R58	7030005010	S.RESISTOR	ERJ2GEJ 681 X (680 Ω)	T
R59	7030005030	S.RESISTOR	ERJ2GEJ 152 X (1.5 kΩ)	T
R60	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R61	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R62	7030009160	S.RESISTOR	ERJ2GEJ 181 X (180 Ω)	T
R68	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R78	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	B
R81	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	B
R88	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R91	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R93	7030005710	S.RESISTOR	ERJ2GEJ 121 X (120 Ω)	T
R95	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R98	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R99	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R100	7030008010	S.RESISTOR	ERJ2GEJ 123 X (12 kΩ)	T
R101	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R102	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R103	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R105	7030005590	S.RESISTOR	ERJ2GEJ 680 X (68 Ω)	T
R106	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R108	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R110	7030008010	S.RESISTOR	ERJ2GEJ 123 X (12 kΩ)	T
R112	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R116	7030005100	S.RESISTOR	ERJ2GEJ 154 X (150 kΩ)	B
R159	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R172	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R174	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R177	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R179	7030005100	S.RESISTOR	ERJ2GEJ 154 X (150 kΩ)	B
R203	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	T
R204	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R205	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R207	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R208	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R209	7030005010	S.RESISTOR	ERJ2GEJ 681 X (680 Ω)	T
R216	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	B
R220	7030005300	S.RESISTOR	ERJ2GEJ 150 X (15 Ω)	T
R221	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R222	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	B
R223	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	B
R224	7030007300	S.RESISTOR	ERJ2GEJ 332 X (3.3 kΩ)	B
R225	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R226	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	B
R228	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	B
R229	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	B
R230	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	B
R231	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R232	7030007300	S.RESISTOR	ERJ2GEJ 332 X (3.3 kΩ)	B
R233	7030009270	S.RESISTOR	ERJ2GEJ 821 X (820 Ω)	B
R234	7030009270	S.RESISTOR	ERJ2GEJ 821 X (820 Ω)	B
R235	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R236	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	B
R237	7030009140	S.RESISTOR	ERJ2GEJ 272 X (2.7 kΩ)	B
R238	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R239	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R240	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R241	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	B
R243	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B

S.=Surface mount

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R245	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	B
R246	7030005110	S.RESISTOR	ERJ2GEJ 224 X (220 kΩ)	B
R247	7030011150	S.RESISTOR	ERJ2GEJ 2R7 X (2.7 Ω)	B
R323	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R324	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	T
R325	7030005570	S.RESISTOR	ERJ2GEJ 820 X (82 Ω)	T
R326	7030005570	S.RESISTOR	ERJ2GEJ 820 X (82 Ω)	T
R327	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	B
R329	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R330	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	B
R335	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R346	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R347	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R352	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R353	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R354	7030005600	S.RESISTOR	ERJ2GEJ 273 X (27 kΩ)	T
R355	7030005030	S.RESISTOR	ERJ2GEJ 152 X (1.5 kΩ)	T
R356	7030008280	S.RESISTOR	ERJ2GEJ 271 X (270 Ω)	T
R357	7030005230	S.RESISTOR	ERJ2GEJ 334 X (330 kΩ)	T
R358	7030005030	S.RESISTOR	ERJ2GEJ 152 X (1.5 kΩ)	T
R359	7030005110	S.RESISTOR	ERJ2GEJ 224 X (220 kΩ)	T
R360	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R361	7030005100	S.RESISTOR	ERJ2GEJ 154 X (150 kΩ)	T
R362	7030005100	S.RESISTOR	ERJ2GEJ 154 X (150 kΩ)	T
R363	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R364	7030005720	S.RESISTOR	ERJ2GEJ 563 X (56 kΩ)	T
R365	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	T
R366	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R367	7030005110	S.RESISTOR	ERJ2GEJ 224 X (220 kΩ)	T
R368	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	T
R369	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R370	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R372	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R373	7030008410	S.RESISTOR	ERJ2GEJ 392 X (3.9 kΩ)	B
R374	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	B
R375	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	B
R376	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	B
R377	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	B
R378	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R379	7030007310	S.RESISTOR	ERJ2GEJ 155 X (1.5 MΩ)	T
R380	7030009140	S.RESISTOR	ERJ2GEJ 272 X (2.7 kΩ)	T
R381	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R382	7030005030	S.RESISTOR	ERJ2GEJ 152 X (1.5 kΩ)	T
R383	7030005030	S.RESISTOR	ERJ2GEJ 152 X (1.5 kΩ)	T
R384	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R385	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R386	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R387	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R388	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R389	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R390	7030005600	S.RESISTOR	ERJ2GEJ 273 X (27 kΩ)	T
R391	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R392	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R393	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	T
R394	7030005600	S.RESISTOR	ERJ2GEJ 273 X (27 kΩ)	T
R396	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	T
R397	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R398	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R414	7030008010	S.RESISTOR	ERJ2GEJ 123 X (12 kΩ)	T
R415	7030007310	S.RESISTOR	ERJ2GEJ 155 X (1.5 MΩ)	T
R423	7030005300	S.RESISTOR	ERJ2GEJ 150 X (15 Ω)	T
R425	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R426	7030005010	S.RESISTOR	ERJ2GEJ 681 X (680 Ω)	T
R427	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	T
R428	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R429	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R430	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R431	7030005110	S.RESISTOR	ERJ2GEJ 224 X (220 kΩ)	T
R432	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	T
R433	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R434	7030009160	S.RESISTOR	ERJ2GEJ 181 X (180 Ω)	T
R435	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R436	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R437	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	T
R438	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R439	7030005030	S.RESISTOR	ERJ2GEJ 152 X (1.5 kΩ)	T
R440	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R441	7030005010	S.RESISTOR	ERJ2GEJ 681 X (680 Ω)	T
R442	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	T
R443	7030005000	S.RESISTOR	ERJ2GEJ 471 X (470 Ω)	T
R444	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R445	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R446	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	B
R447	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R448	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R449	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R450	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R451	7030007300	S.RESISTOR	ERJ2GEJ 332 X (3.3 kΩ)	B
R452	7030005100	S.RESISTOR	ERJ2GEJ 154 X (150 kΩ)	B
R453	7030005100	S.RESISTOR	ERJ2GEJ 154 X (150 kΩ)	B
R454	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R455	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	B
R457	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	B
R458	7030005160	S.RESISTOR	ERJ2GEJ 105 X (1 MΩ)	B
R459	7030005170	S.RESISTOR	ERJ2GEJ 474 X (470 kΩ)	B
R461	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	T
R462	7030008410	S.RESISTOR	ERJ2GEJ 392 X (3.9 kΩ)	B
R463	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	B
R464	7030005050	S.RESISTOR	ERJ2GEJ 103 X (10 kΩ)	B
R465	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	B
R466	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	B
R467	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R469	7030005070	S.RESISTOR	ERJ2GEJ 683 X (68 kΩ)	T
R471	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	T
R472	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R473	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R474	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	T
R475	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R476	7030005310	S.RESISTOR	ERJ2GEJ 124 X (120 kΩ)	B
R478	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	B
R479	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	B
R481	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	B
R482	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	B
R483	7030005240	S.RESISTOR	ERJ2GEJ 473 X (47 kΩ)	B
R484	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	B
R485	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	B
R486	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	B
R487	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	B
R488	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	B
R489	7030005220	S.RESISTOR	ERJ2GEJ 223 X (22 kΩ)	T
R490	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R491	7030007280	S.RESISTOR	ERJ2GEJ 331 X (330 Ω)	T
R492	7030007270	S.RESISTOR	ERJ2GEJ 151 X (150 Ω)	T
R493	7030007270	S.RESISTOR	ERJ2GEJ 151 X (150 Ω)	T
R494	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R495	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R496	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R497	7030004990	S.RESISTOR	ERJ2GEJ 221 X (220 Ω)	T
R498	7030004980	S.RESISTOR	ERJ2GEJ 101 X (100 Ω)	T
R499	7030005570	S.RESISTOR	ERJ2GEJ 820 X (82 Ω)	T
R500	7030005570	S.RESISTOR	ERJ2GEJ 820 X (82 Ω)	T
R501	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R503	7030007310	S.RESISTOR	ERJ2GEJ 155 X (1.5 MΩ)	T
R505	7030008010	S.RESISTOR	ERJ2GEJ 123 X (12 kΩ)	T
R510	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	B
R511	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	B
R512	7030008410	S.RESISTOR	ERJ2GEJ 392 X (3.9 kΩ)	T
R513	7030005110	S.RESISTOR	ERJ2GEJ 224 X (220 kΩ)	T
R514	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R515	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R516	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R517	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R518	7030005120	S.RESISTOR	ERJ2GEJ 102 X (1 kΩ)	T
R519	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R520	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R521	7030004970	S.RESISTOR	ERJ2GEJ 470 X (47 Ω)	T
R522	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R523	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R524	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	T
R525	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	B
R526	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	B
R527	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	B
R528	7030007290	S.RESISTOR	ERJ2GEJ 222 X (2.2 kΩ)	T
R529	7030005000	S.RESISTOR	ERJ2GEJ 471 X (470 Ω)	T
R530	7030005040	S.RESISTOR	ERJ2GEJ 472 X (4.7 kΩ)	T
R531	7030005090	S.RESISTOR	ERJ2GEJ 104 X (100 kΩ)	B
R532	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	B
R533	7030005530	S.RESISTOR	ERJ2GEJ 100 X (10 Ω)	B
R534	7030011150	S.RESISTOR	ERJ2GEJ 2R7 X (2.7 Ω)	B
R536	7030003290	S.RESISTOR	ERJ3GEYJ 560 V (56 Ω)	T
R537	7030003290	S.RESISTOR	ERJ3GEYJ 560 V (56 Ω)	T
R538	7030010040	S.RESISTOR	ERJ2GE-JPW	B

S.=Surface mount

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
R539	7030005300	S.RESISTOR	ERJ2GEJ 150 X (15 Ω)	B
R540	7030005300	S.RESISTOR	ERJ2GEJ 150 X (15 Ω)	B
R541	7030007270	S.RESISTOR	ERJ2GEJ 151 X (150 Ω)	T
R542	7030007340	S.RESISTOR	ERJ2GEJ 153 X (15 kΩ)	T
C5	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C12	4030017420	S.CERAMIC	ECJ0EC1H470J	B
C13	4030017650	S.CERAMIC	ECJ0EC1H270J	B
C14	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C15	4030017340	S.CERAMIC	ECJ0EC1H010B	B
C16	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C18	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C22	4030017590	S.CERAMIC	ECJ0EC1H070C	T
C23	4030017380	S.CERAMIC	ECJ0EC1H050B	T
C27	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C28	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C30	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C32	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C40	4030017640	S.CERAMIC	ECJ0EC1H150J	T
C41	4030017380	S.CERAMIC	ECJ0EC1H050B	T
C42	4030017370	S.CERAMIC	ECJ0EC1H3R5B	T
C43	4030017430	S.CERAMIC	ECJ0EC1H101J	T
C44	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C45	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C46	4030017360	S.CERAMIC	ECJ0EC1H030B	T
C47	4030017580	S.CERAMIC	ECJ0EC1H060C	T
C48	4030017580	S.CERAMIC	ECJ0EC1H060C	T
C49	4030017360	S.CERAMIC	ECJ0EC1H030B	T
C50	4030017340	S.CERAMIC	ECJ0EC1H010B	T
C51	4030017560	S.CERAMIC	ECJ0EC1H2R5B	T
C52	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C54	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C55	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C58	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C59	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C60	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C61	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C62	4550006200	S.TANTALUM	ECST0JY106R	B
C63	4030017700	S.CERAMIC	ECJ0EC1H151J	B
C64	4030017640	S.CERAMIC	ECJ0EC1H150J	B
C65	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C66	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C69	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C70	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C71	4030017360	S.CERAMIC	ECJ0EC1H030B	T
C73	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C74	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C75	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C92	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C93	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C94	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C95	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C96	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C97	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C98	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C99	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C100	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C101	4030017620	S.CERAMIC	ECJ0EC1H100C	T
C102	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C103	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C121	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C134	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C136	4030017590	S.CERAMIC	ECJ0EC1H070C	T
C138	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C141	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C142	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C145	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C147	4030017560	S.CERAMIC	ECJ0EC1H2R5B	T
C148	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C150	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C153	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C200	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C201	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C202	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C203	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C206	4030017370	S.CERAMIC	ECJ0EC1H3R5B	T
C214	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C218	4030017340	S.CERAMIC	ECJ0EC1H010B	T
C221	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C233	4030017460	S.CERAMIC	ECJ0EB1E102K	B

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C239	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C241	4030011810	S.CERAMIC	C1608 JB 1A 224K-T	B
C242	4030011810	S.CERAMIC	C1608 JB 1A 224K-T	T
C259	4030017430	S.CERAMIC	ECJ0EC1H101J	T
C264	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C402	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C408	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C410	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C414	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C416	4030017650	S.CERAMIC	ECJ0EC1H270J	B
C424	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C427	4030017400	S.CERAMIC	ECJ0EC1H220J	T
C430	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C431	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C432	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C433	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C434	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C435	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C436	4030017360	S.CERAMIC	ECJ0EC1H030B	T
C503	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C504	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C505	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C511	4030018010	S.CERAMIC	ECJ0EC1H360J	B
C512	4030017620	S.CERAMIC	ECJ0EC1H100C	B
C513	4030017430	S.CERAMIC	ECJ0EC1H101J	B
C514	4030017710	S.CERAMIC	ECJ0EC1H181J	B
C515	4030017690	S.CERAMIC	ECJ0EC1H121J	B
C516	4030017440	S.CERAMIC	ECJ0EC1H221J	B
C517	4030017430	S.CERAMIC	ECJ0EC1H101J	B
C518	4030017440	S.CERAMIC	ECJ0EC1H221J	B
C519	4030017780	S.CERAMIC	ECJ0EB1E472K	B
C520	4030018080	S.CERAMIC	ECJ0EB1H182K	B
C521	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C522	4030017910	S.CERAMIC	ECJ0EB1H152K	B
C523	4030017910	S.CERAMIC	ECJ0EB1H152K	B
C524	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C525	4030017780	S.CERAMIC	ECJ0EB1E472K	B
C526	4030017900	S.CERAMIC	ECJ0EB1C123K	B
C527	4030017420	S.CERAMIC	ECJ0EC1H470J	B
C528	4030017620	S.CERAMIC	ECJ0EC1H100C	B
C529	4030017700	S.CERAMIC	ECJ0EC1H151J	B
C530	4030017450	S.CERAMIC	ECJ0EB1E271K	B
C531	4030017430	S.CERAMIC	ECJ0EC1H101J	B
C532	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C533	4030017910	S.CERAMIC	ECJ0EB1H152K	B
C534	4030017430	S.CERAMIC	ECJ0EC1H101J	B
C535	4030017750	S.CERAMIC	ECJ0EB1E122K	B
C536	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C537	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C538	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C539	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C540	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C541	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C542	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C543	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C544	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C545	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C546	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C548	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C558	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C560	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C561	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C562	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C563	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C566	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C567	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C568	4030017420	S.CERAMIC	ECJ0EC1H470J	T
C569	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C570	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C571	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C657	4030017700	S.CERAMIC	ECJ0EC1H151J	B
C658	4030018140	S.CERAMIC	ECJ0EB1H391K	B
C659	4550006200	S.TANTALUM	ECST0JY106R	B
C662	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C663	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C664	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C665	4030017430	S.CERAMIC	ECJ0EC1H101J	T
C666	4030018140	S.CERAMIC	ECJ0EB1H391K	T
C667	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C669	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C673	4030017460	S.CERAMIC	ECJ0EB1E102K	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C674	4030017420	S.CERAMIC	ECJ0EC1H470J	B
C676	4030017400	S.CERAMIC	ECJ0EC1H220J	T
C677	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C678	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C679	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C683	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C686	4030018140	S.CERAMIC	ECJ0EB1H391K	T
C687	4030018140	S.CERAMIC	ECJ0EB1H391K	T
C688	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C689	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C690	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C691	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C692	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C694	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C697	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C698	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C699	4030017440	S.CERAMIC	ECJ0EC1H221J	T
C700	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C701	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C702	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C703	4030017480	S.CERAMIC	C1608 JB 1A 474K-T	T
C704	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C705	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C706	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C707	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C708	4030011810	S.CERAMIC	C1608 JB 1A 224K-T	B
C709	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C710	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C711	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C712	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C713	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C714	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C715	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C716	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C717	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C718	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C719	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C720	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C740	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C741	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C744	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C745	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C746	4030017370	S.CERAMIC	ECJ0EC1H3R5B	T
C747	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C748	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C749	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C750	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C752	4030017400	S.CERAMIC	ECJ0EC1H220J	T
C753	4030017400	S.CERAMIC	ECJ0EC1H220J	T
C754	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C755	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C756	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C757	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C758	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C759	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C760	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C761	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C762	4030017430	S.CERAMIC	ECJ0EC1H101J	T
C764	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C765	4030017620	S.CERAMIC	ECJ0EC1H100C	T
C766	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C767	4030011810	S.CERAMIC	C1608 JB 1A 224K-T	B
C768	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C769	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C770	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C771	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C772	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C773	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C774	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C775	4550006200	S.TANTALUM	ECST0JY106R	B
C776	4030011810	S.CERAMIC	C1608 JB 1A 224K-T	B
C777	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C778	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C779	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C780	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C781	4030017440	S.CERAMIC	ECJ0EC1H221J	T
C782	4030017440	S.CERAMIC	ECJ0EC1H221J	T
C783	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C784	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C785	4030017640	S.CERAMIC	ECJ0EC1H150J	B
C786	4030017700	S.CERAMIC	ECJ0EC1H151J	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C788	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C789	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C790	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C791	4550006200	S.TANTALUM	ECST0JY106R	B
C792	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C793	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C794	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C795	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C796	4030011810	S.CERAMIC	C1608 JB 1A 224K-T	B
C797	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C807	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C808	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C809	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C811	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C812	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C814	4030017350	S.CERAMIC	ECJ0EC1H020B	T
C815	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C816	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C817	4030017590	S.CERAMIC	ECJ0EC1H070C	T
C827	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C828	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C832	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C833	4030017340	S.CERAMIC	ECJ0EC1H010B	B
C834	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C835	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C836	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C837	4030017430	S.CERAMIC	ECJ0EC1H101J	B
C838	4030017430	S.CERAMIC	ECJ0EC1H101J	B
C839	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C840	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C841	4030017390	S.CERAMIC	ECJ0EC1H180J	B
C842	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C843	4030017600	S.CERAMIC	ECJ0EC1H080C	B
C844	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C845	4030017600	S.CERAMIC	ECJ0EC1H080C	T
C846	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C847	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C848	4030017360	S.CERAMIC	ECJ0EC1H030B	T
C849	4030017430	S.CERAMIC	ECJ0EC1H101J	T
C850	4030017430	S.CERAMIC	ECJ0EC1H101J	T
C851	4030017650	S.CERAMIC	ECJ0EC1H270J	T
C852	4030017650	S.CERAMIC	ECJ0EC1H270J	T
C853	4030017640	S.CERAMIC	ECJ0EC1H150J	T
C854	4030017610	S.CERAMIC	ECJ0EC1H090C	T
C855	4030017420	S.CERAMIC	ECJ0EC1H470J	T
C856	4030017590	S.CERAMIC	ECJ0EC1H070C	T
C857	4030017430	S.CERAMIC	ECJ0EC1H101J	T
C858	4030017630	S.CERAMIC	ECJ0EC1H120J	T
C859	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C860	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C861	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C862	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C863	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C864	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C865	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C866	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C867	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C868	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C869	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C870	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C871	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C872	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C873	4030017440	S.CERAMIC	ECJ0EC1H221J	T
C874	4030017390	S.CERAMIC	ECJ0EC1H180J	T
C875	4030017510	S.CERAMIC	ECJ0EC1H680J	T
C876	4030017500	S.CERAMIC	ECJ0EC1H560J	T
C877	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C878	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C879	4030017620	S.CERAMIC	ECJ0EC1H100C	T
C880	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C881	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C882	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C884	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C885	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C886	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C887	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C888	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C889	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C890	4030016930	S.CERAMIC	ECJ0EB1A104K	T
C891	4030016790	S.CERAMIC	ECJ0EB1C103K	B
C893	4030016790	S.CERAMIC	ECJ0EB1C103K	T

S.=Surface mount

[RF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C894	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C895	4030017730	S.CERAMIC	ECJ0EB1E471K	T
C896	4030016790	S.CERAMIC	ECJ0EB1C103K	T
C897	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C898	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C899	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C900	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C901	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C902	4030017420	S.CERAMIC	ECJ0EC1H470J	T
C903	4030017420	S.CERAMIC	ECJ0EC1H470J	T
C904	4030017420	S.CERAMIC	ECJ0EC1H470J	T
C905	4030017420	S.CERAMIC	ECJ0EC1H470J	T
C906	4030017420	S.CERAMIC	ECJ0EC1H470J	T
C907	4030017420	S.CERAMIC	ECJ0EC1H470J	T
C908	4030017420	S.CERAMIC	ECJ0EC1H470J	T
C909	4550007130	S.TANTALUM	ECST0GX107R	B
C910	4550007130	S.TANTALUM	ECST0GX107R	B
C911	4550007130	S.TANTALUM	ECST0GX107R	B
C912	4030016930	S.CERAMIC	ECJ0EB1A104K	B
C913	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C914	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C916	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C917	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C918	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C919	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C920	4030017460	S.CERAMIC	ECJ0EB1E102K	T
C921	4030017460	S.CERAMIC	ECJ0EB1E102K	B
C922	4030017700	S.CERAMIC	ECJ0EC1H151J	T
J1	6510022160	S.CONNECTOR	AXN440C040P	T
W1	7120000470	JUMPER	ERDS2T0	
W2	7120000470	JUMPER	ERDS2T0	
EP1	0910058144	PCB	B 6078D	
EP2	3310003010	ANTENNA	KY-058-006-2 <KAI>	

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

6-2 BC-156

[TANSHI BOARD]

REF NO.	ORDER NO.	DESCRIPTION		M.
D1	1710000050	DIODE	1SS53	T
R1	7100000820	RESISTOR	2SG 0.15	T
R2	7510000530	THERMISTOR	ERT-D2FHL 103S	T
C1	4010007620	CERAMIC	DSXE65SJ YF 473Z	T
RL1	6330001630	RELAY	A-5W-K	T
J1	6510003570	CONNECTOR	S09B-EH-S	T
EP1	0910052472	PCB	B 5425B	
EP2	9001602001	TUBE	IRRAX 0.7 (d) L=10 mm	

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
IC1	1110005090	S.IC	MM1433EVBE	T
IC2	1110006250	S.IC	NJM2360AM-TE3	T
Q1	1520000600	S.TRANSISTOR	2SB1184 TL Q	T
Q2	1590001870	S.TRANSISTOR	DTA114EE TL	T
Q3	1590003450	S.TRANSISTOR	UNR9214J-(TX)	T
Q4	1590001870	S.TRANSISTOR	DTA114EE TL	T
Q5	1590001870	S.TRANSISTOR	DTA114EE TL	T
Q6	1590001870	S.TRANSISTOR	DTA114EE TL	T
Q7	1550000020	S.FET	2SJ377 (TE16R)	T
Q8	1590002310	S.TRANSISTOR	DTC114EE TL	T
D1	1790000680	S.DIODE	SB20-03P-TD	T
D2	1790000680	S.DIODE	SB20-03P-TD	T
D3	1790001250	S.DIODE	MA2S111-(TX)	T
D4	1790000850	S.DIODE	MA132WK (TX)	T
D5	1750000120	S.DIODE	DWA010-TE	T
D6	1790000680	S.DIODE	SB20-03P-TD	T
L1	6190001150	COIL	HK-08S050-2010	T
R2	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)	T
R3	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	T
R5	7030005321	S.RESISTOR	ERA3YED 103V	T
R6	7030005501	S.RESISTOR	ERA3YKD 124V (120 kΩ)	T
R9	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)	T
R11	7030005691	S.RESISTOR	ERA3YED 123V	T
R12	7030006601	S.RESISTOR	ERA3YED 272V	T
R14	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	T
R15	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)	T
R16	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R17	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)	T
R18	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R19	7030007330	S.RESISTOR	ERJ1WRSJR15U (0.15 Ω)	T
R21	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	T
R22	7030007911	S.RESISTOR	ERA3YKD 563V (56 kΩ)	T
R23	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
C1	4030009660	S.CERAMIC	C1608 JF 1C 224Z-T	T
C2	4510004510	ELECTROLYTIC	25 MV 470 HC	T
C3	4030006850	S.CERAMIC	C1608 JB 1H 471K-T	T
C4	4510004590	ELECTROLYTIC	16 MV 470 HC	T
C5	4030006900	S.CERAMIC	C1608 JB 1H 103K-T	T
C6	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C7	4030009660	S.CERAMIC	C1608 JF 1C 224Z-T	T
C8	4510006760	ELECTROLYTIC	20 SA 100M	T
C9	4030009660	S.CERAMIC	C1608 JF 1C 224Z-T	T

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
C10	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C12	4510004590	ELECTROLYTIC	16 MV 470 HC	T
C13	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C14	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C15	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C16	4550000540	S.TANTALUM	TEESVA 1V 154M8L	T
C18	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C19	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C20	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C21	4510004640	S.ELECTROLYTIC	ECEV1CA470SP	T
C22	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C23	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C24	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C25	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C26	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C27	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C28	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C29	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C30	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C31	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C32	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C33	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C34	4030011600	S.CERAMIC	C1608 JB 1E 104K-T	T
C35	4030006860	S.CERAMIC	C1608 JB 1H 102K-T	T
C36	4550006540	S.TANTALUM	ECST1CY475R	T
J1	6450000410	CONNECTOR	HEC0470-01-630	T
F1	5210000040	FUSE	FGB 2A (FGB0 125V)	T
F2	5220000020	HOLDER	S-N5051	T
F3	5220000020	HOLDER	S-N5051	T
DS1	5040002150	LED	VRPG3349S-734	T
WS1	8600036620	OTHER	EX2308 P01*J04MA	
EP1	0910052462	PCB	B 5373B	

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

SECTION 7 MECHANICAL PARTS AND DISASSEMBLY

[CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6510024470	Connector BNC-R168	1
W1	8900009640	Cable OPC-963	1
MP1	8210020700	2699 front panel assembly	1
MP2	8210020710	2699 rear panel assembly	1
MP3	8110008140	2699 battery cover	1
MP4	8310061220	2699 lock plate	1
MP5	8930062400	2699 jack cap	1
MP6	8930062410	2699 USB cap	1
MP7	8610011940	Knob N320	2
MP8	8930062440	2699 detection button	1
MP9	8930062450	2699 button	1
MP11	8930062470	2699 TOP PLATE	1
MP12	8930062500	2699 A-terminal Y713	1
MP13	8930062510	2699 B-terminal Y714	1
MP14	8930062520	2699 C-terminal Y715	3
MP15	8930051630	2304 sheet	1
MP16	8930050560	2304 C1-terminal	1
MP17	8930050570	2304 C2-terminal	1
MP18	8930051390	2304 shaft	1
MP19	8830000570	knut (A) FX643	2
MP20	8810005700	Screw PH No.0 M2 × 4 black	1
MP21	8810009220	Screw PH B0 M2 × 8 ZK (BT)	2
MP22	8810008750	Screw PH BT M2 × 15 ZK	4
MP23	8930051851	891 terminal rubber (B)-1	3
MP24	8610007510	Knob spring No.7800 [SEA], [EXP], [CAN] only	2
MP26	8810008640	Screw FH BT No.0 M2 × 4 NI-ZU	3
MP27	8810008640	Screw FH BT No.0 M2 × 4 NI-ZU	4
MP28	8810008640	Screw FH BT No.0 M2 × 4 NI-ZU	2
MP29	8310061230	2699 window plate	1
MP30	8930062390	2699 window sheet	1
MP31	8930062420	2699 lens	1
MP32	8930062430	2699 keyboard	1
MP34	8810008640	Screw FH BT No.0 M2 × 4 NI-ZU	1
MP35	8810005700	Screw FH No.0 M2 × 4 black	1
MP36	8930063290	Insulation sheet (HW)	3
SP 1	2510000960	speaker K036NA500-26	1

[RF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
EP 2	3310003010	Antenna KY-058-006-2 <KAI>	1
MP1	8930063280	Double side tape (AP)	1

[1STAVCO BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510016210	2699 A-VCO case Y723	1

[1STBVCO BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510016220	2699 B-VCO case Y724	1

[2NDCVCO BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510016230	2699 C-VCO case	1

[2NDDVCO BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510016230	2699 C-VCO case	1

[DOWNCONV BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510016240	2699 conv case	1
MP2	8930062490	2699 conv plate	1

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
S24	2250000200	Encoder TP90N00E20-16F-1517	1
S25	2250000200	Encoder TP90N00E20-16F-1517	1
DS12	5030002690	LCD M3-0243TIY	1
MP2	8930062480	2699 LCD holder	1
MP3	8930062530	2699 battery spring	2
MP4	8930062540	Sponge (HO)	1
MP5	8510016370	2699 LOGIC shield plate Y725	1

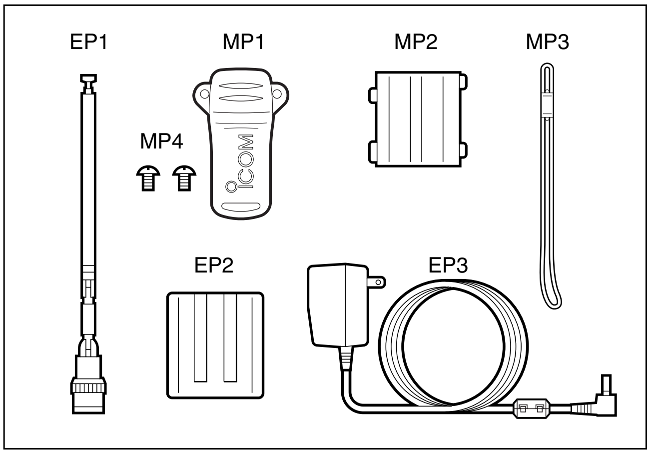
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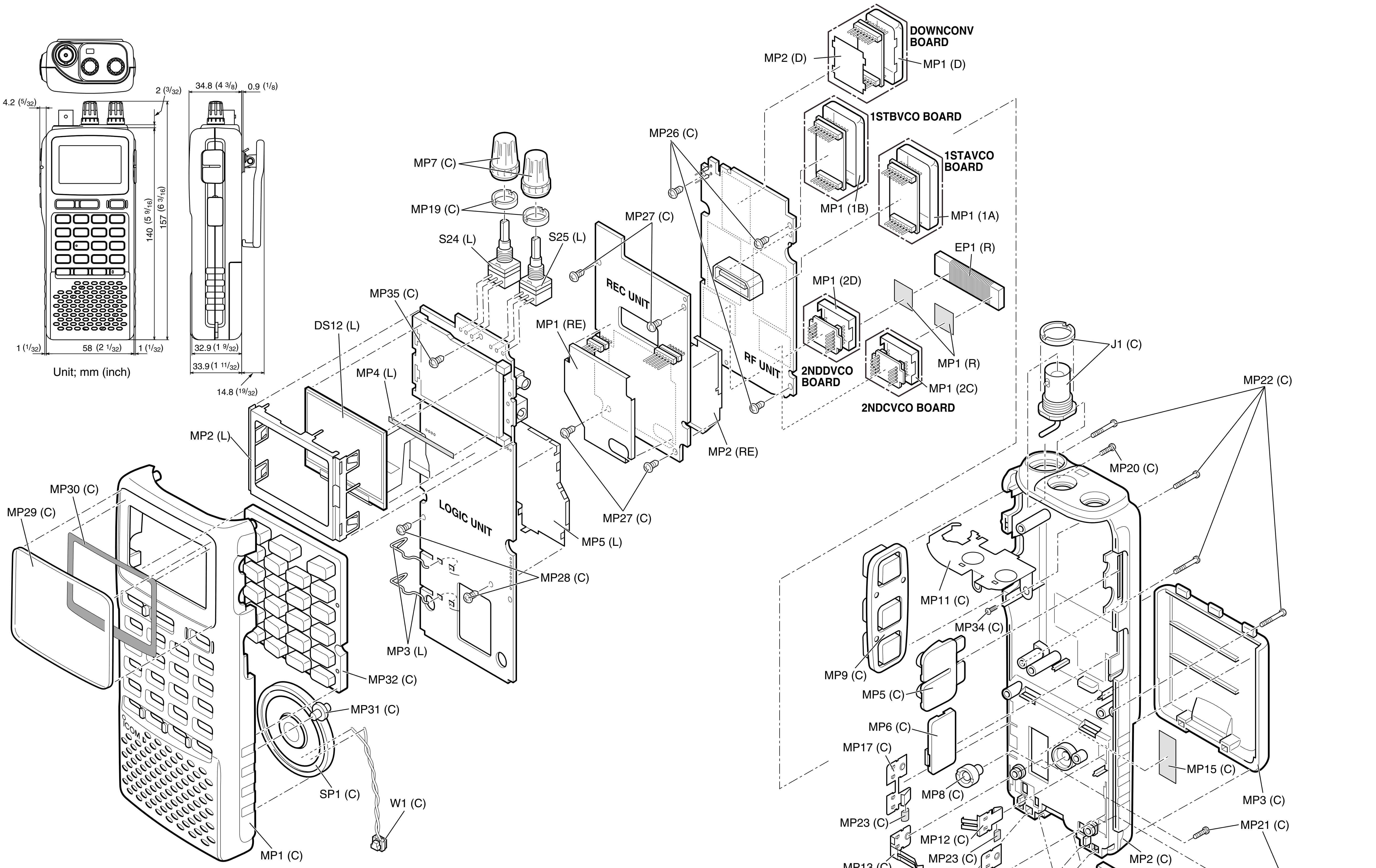
REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8510016250	2699 A-REC case	1
MP2	8510016260	2699 B-REC case	1

Screw abbreviations B0, BT: Self-tapping
PH: Pan head, FH: Flat head,
NI-ZU: Nickel-Zinc
ZK: Black

[ACCESSORIES]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
EP1	3310002670	Antenna FA-B04RE	1
EP2	0800005460	Battery BP-206 ACC except [SEA]	1
EP3	0800006350	AC adapter BC-149A [USA], [EXP-01], [CAN] only	1
	0800006360	AC adapter BC-149D [EUR], [FRA], [EXP-02] only	1
MP1	8930061480	Clip MB-98 ACC (2742 clip assembly)	1
MP2	8930050410	2304 spacer	1
MP3	8010018080	Strap belt HK-009	1





UNIT abbreviations

(C)	: CHASSIS PARTS	(1A)	: 1STAVCO BOARD
(R)	: RF UNIT	(1B)	: 1STBVCO BOARD
(D)	: DOWNCONV BOARD	(2C)	: 2NDCVCO BOARD
(L)	: LOGIC UNIT	(2D)	: 2NDDVCO BOARD
(RE)	: REC UNIT		

SECTION 8 SEMI-CONDUCTOR INFORMATION

• TRANSISTOR AND FET'S

IC-R20

2SA1362-GR (Symbol: AEG)	**2SA1586-GR** (Symbol: SG)	**2SA1588 GR** (Symbol: ZG)	**2SB1132 R** (Symbol: BAR)	**2SB1201-S-TL** (Symbol: B1201)
2SC4116 GR (Symbol: LL)	**2SC4117-BL** (Symbol: CL)	**2SC4226 R24** (Symbol: R24)	**2SC4617 TLS** (Symbol: BS)	**2SC5006-T1** (Symbol: 24)
2SC5008-T1 (Symbol: 24)	**2SC5231C8-TL** (Symbol: C8)	**2SC5277D2-TL** (Symbol: D2)	**2SC5624VH-TL** (Symbol: VH-)	**2SJ144-Y** (Symbol: VX)
2SK1069-4 (Symbol: FJ)	**2SK880-GR** (Symbol: XG)	**FH102-TL** (Symbol: 102)	**HAT1023R-EL** (Symbol: 1023)	**UMD6N TR** (Symbol: D6)
UNR9110J (Symbol: 6L)	**UNR9111J** (Symbol: 6A)	**UNR9113J** (Symbol: 6C)	**UNR9115J** (Symbol: 6E)	**UNR921NJ** (Symbol: EX)
UPA805T-T1 (Symbol: T82)	**XP1110** (Symbol: AD)	**XP1113** (Symbol: 7L)	**XP1501-AB** (Symbol: 5R)	**XP4312** (Symbol: 7T)
XP4601 (Symbol: 5C)	**XP6501-AB** (Symbol: 5N)			

BC-156

2SB1184 TL Q (Symbol: B1184)	**2SJ377** (Symbol: 4L)	**DTA114EE TL** (Symbol: 14)	**DTC114EE TL** (Symbol: 24)	**UNR9214J-(TX)** (Symbol: 8D)

• DIODES

IC-R20

1SS372 (Symbol: N9)	**1SV172** (Symbol: BE)	**1SV245** (Symbol: T3)	**1SV308** (Symbol: TX)	**1SV314** (Symbol: V6)
DAP222 TL (Symbol: P)	**HN2V02H-B** (Symbol: 2V02H)	**HVC350BTRF** (Symbol: B0)	**HVC375BTRF** (Symbol: B8)	**HVC376BTRF** (Symbol: B9)
HVC417CTRU (Symbol: A8)	**1SS400** (Symbol: A)	**MA133** (Symbol: MP)	**MA2S077** (Symbol: S)	**MA2S111** (Symbol: A)
MA2S728 (Symbol: B)	**MA8027-H** (Symbol: 2^7)	**RB876W TL** (Symbol: 3X)	**SB07-03C-TB** (Symbol: J)	**SVC347S/T-TL** (Symbol: V1)

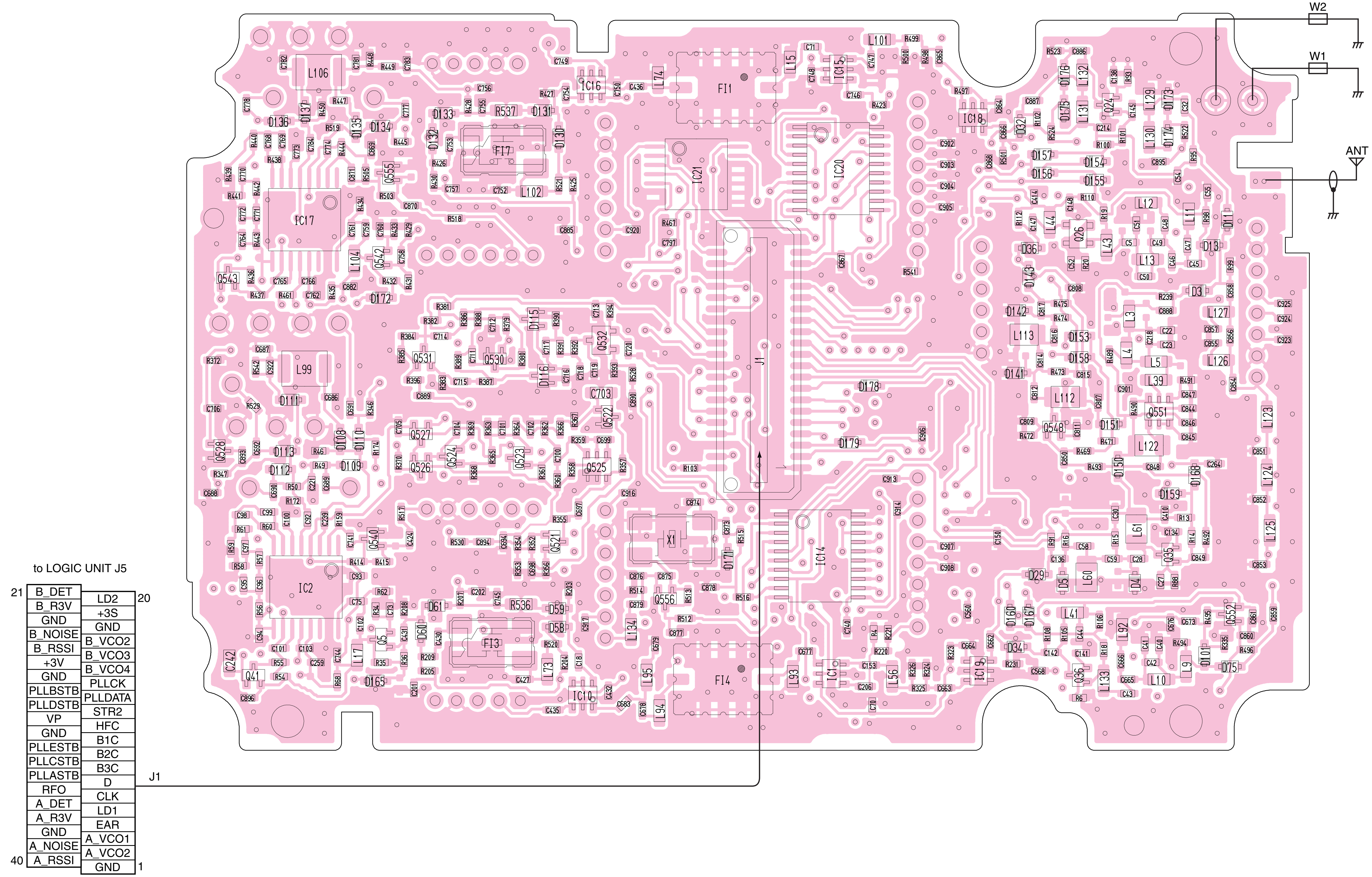
BC-156

1SS53 (Symbol: White line)	**DWA010-TE** (Symbol: W8)	**MA132WK(TX)** (Symbol: MU)	**MA2S111-(TX)** (Symbol: A)	**SB20-03P-TD** (Symbol: SC)

The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

9-1 RF UNIT

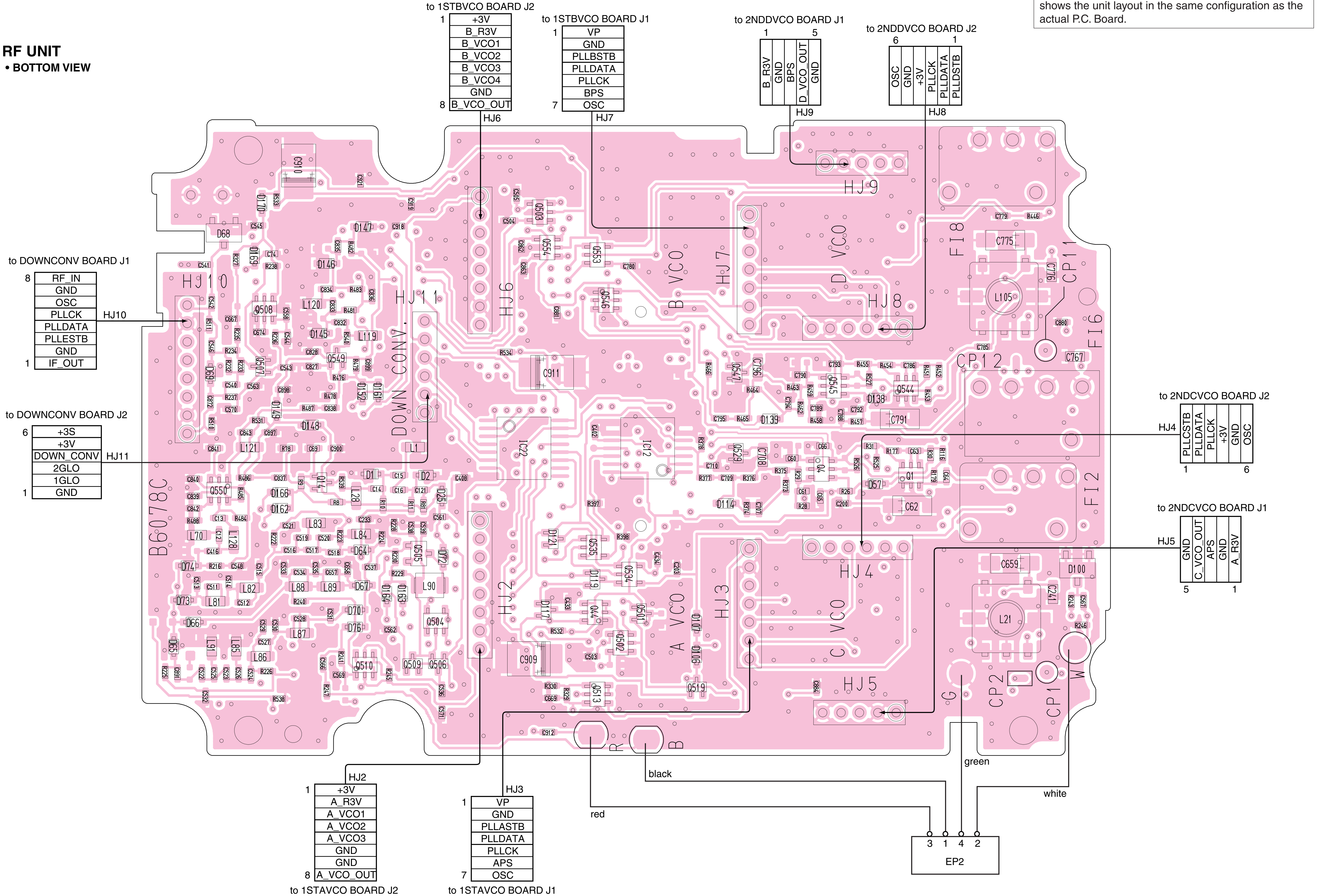
• TOP VIEW



RF UNIT

• BOTTOM VIEW

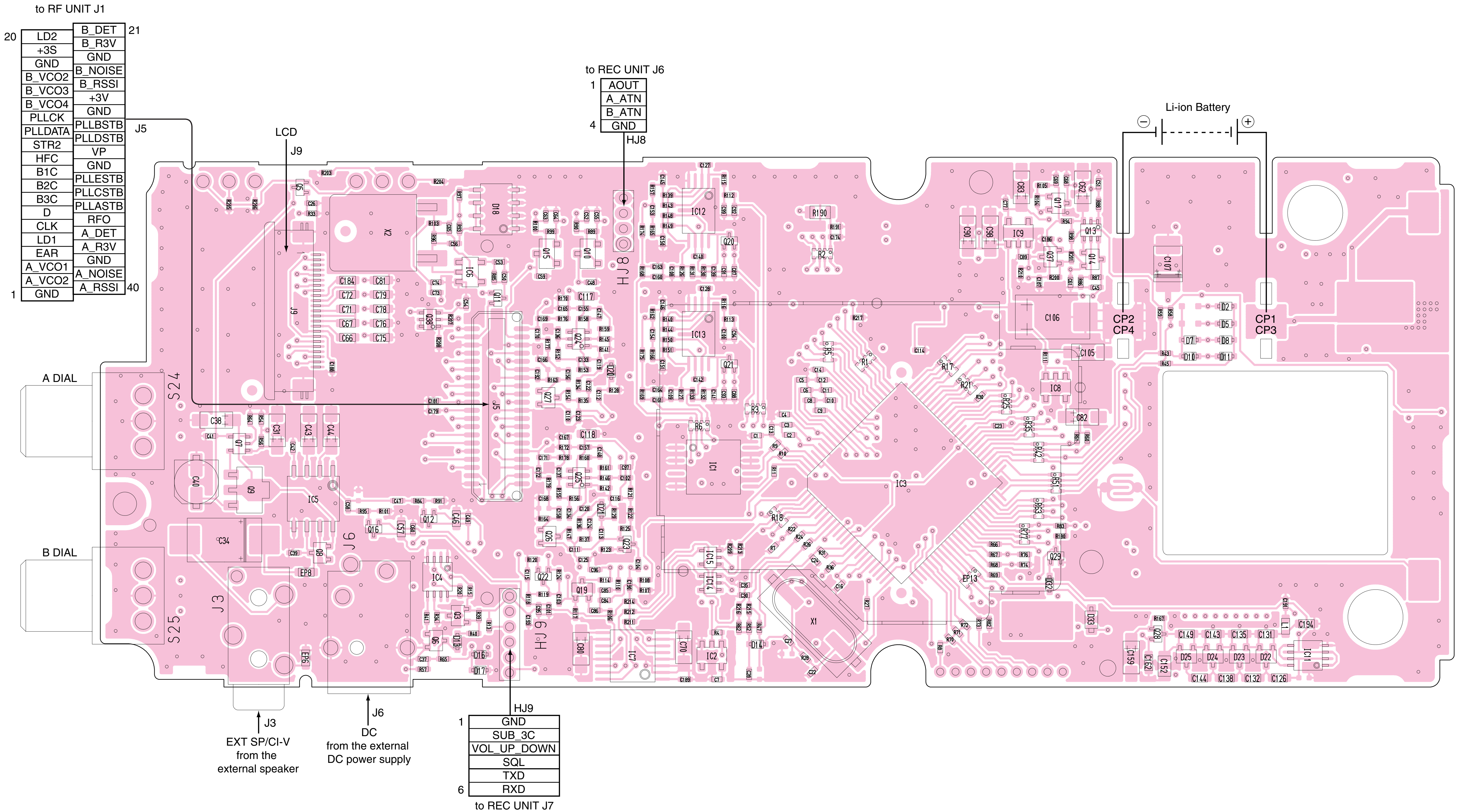
The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.



The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

9-2 LOGIC UNIT

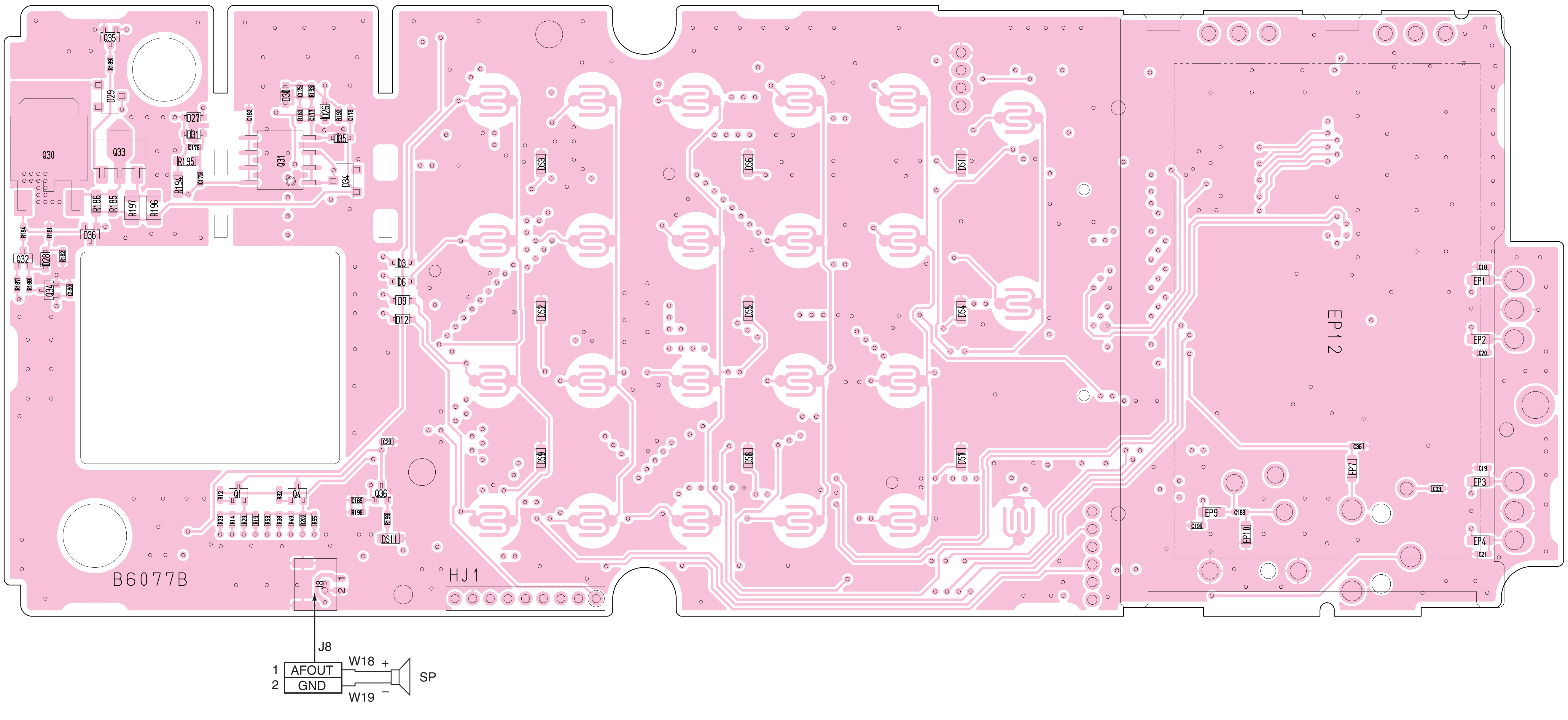
• TOP VIEW



The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.

LOGIC UNIT

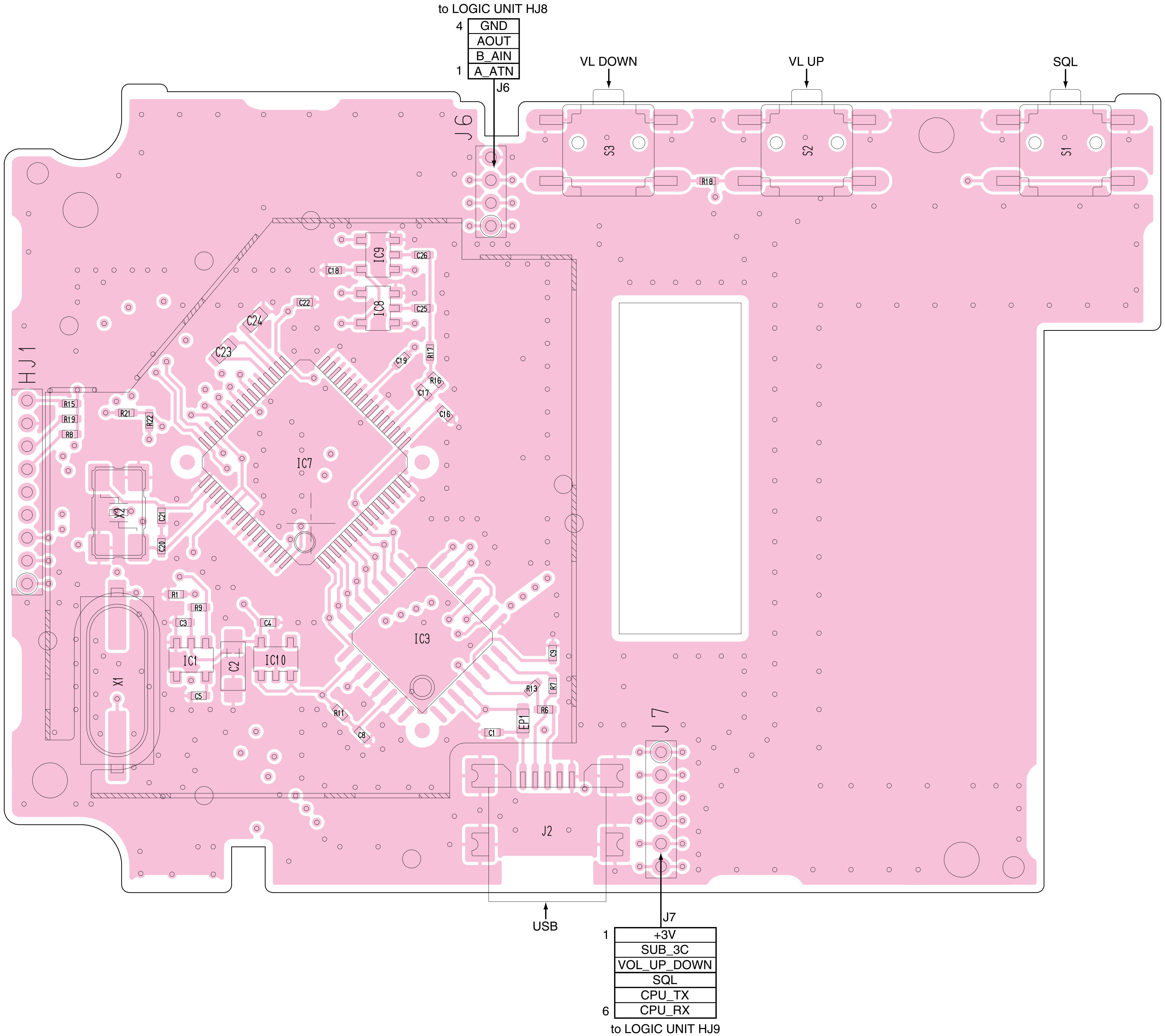
• BOTTOM VIEW



The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

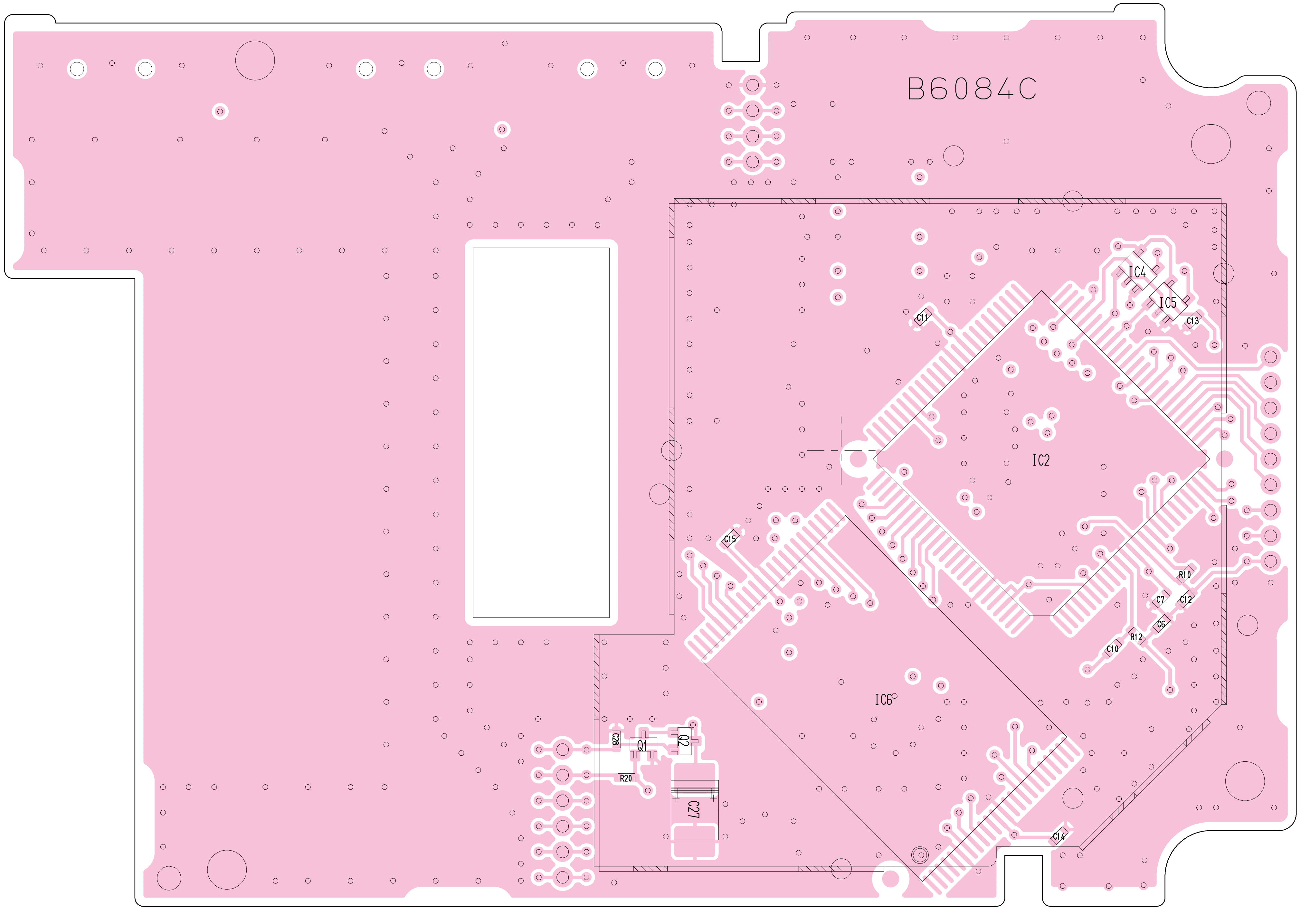
9-3 REC UNIT

• **TOP VIEW**

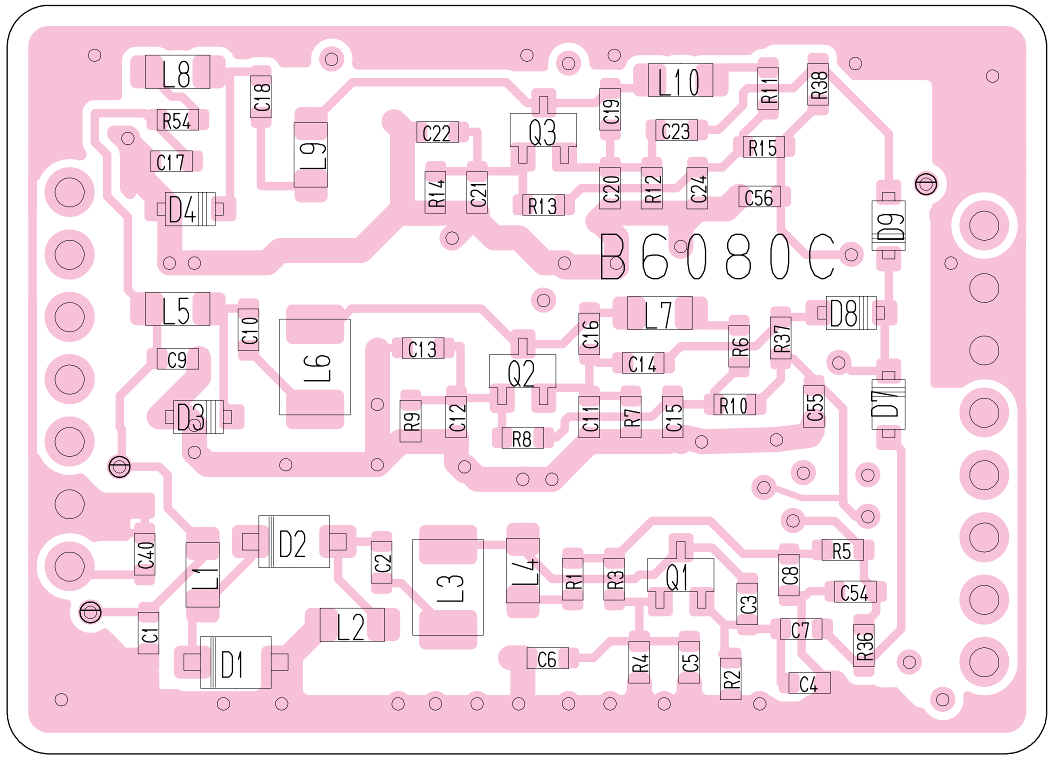


The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.

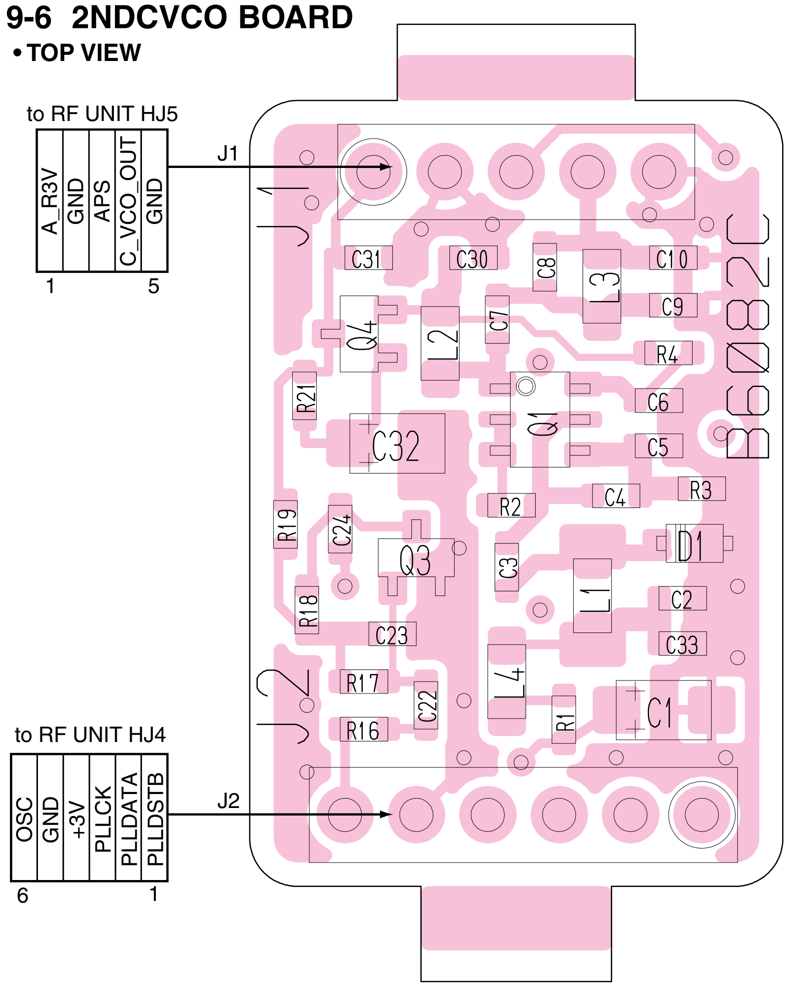
REC UNIT
• BOTTOM VIEW



9-4 1STAVCO BOARD
• TOP VIEW

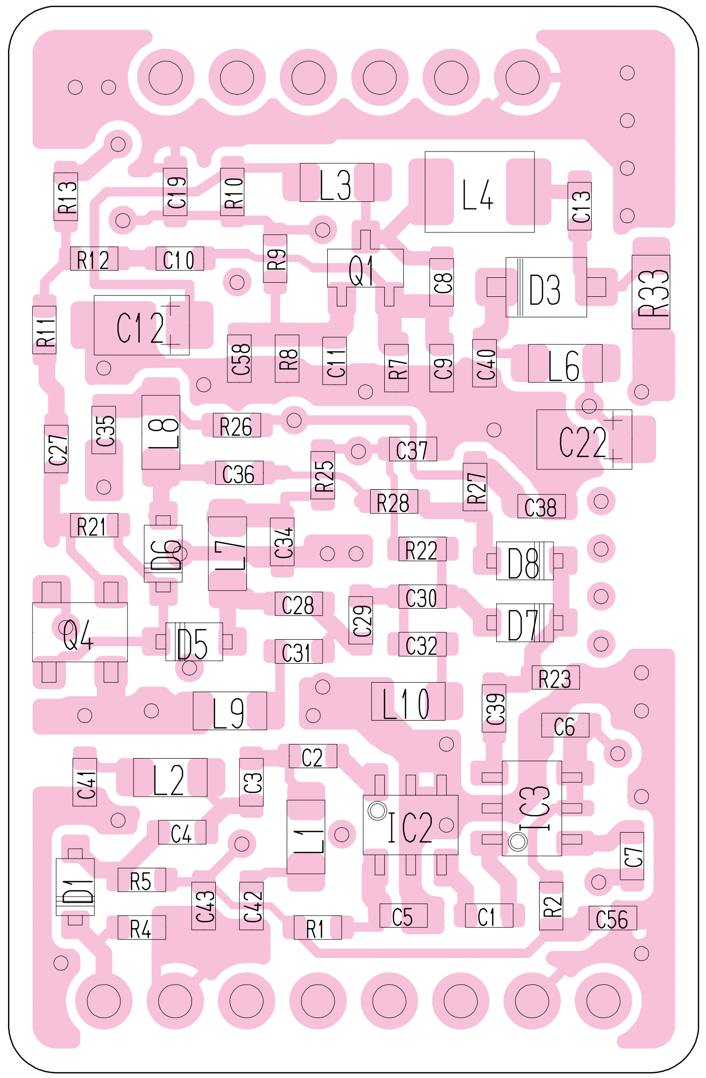


9-6 2NDCVCO BOARD
• TOP VIEW

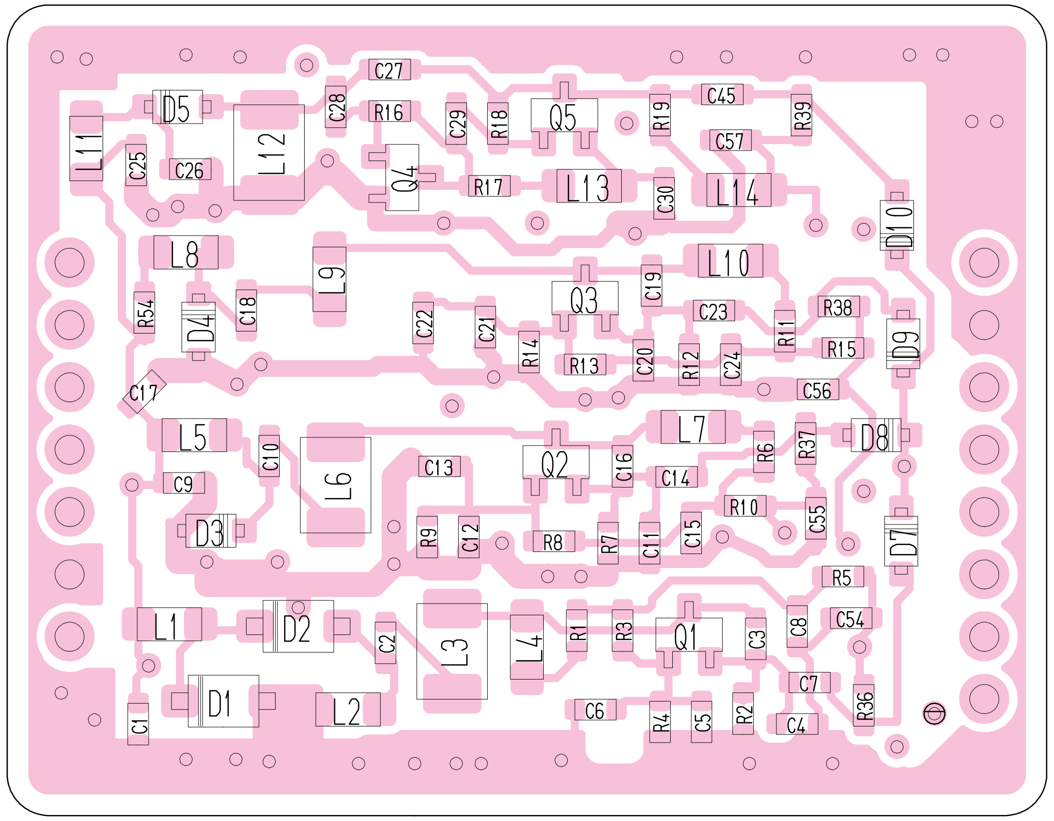


The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

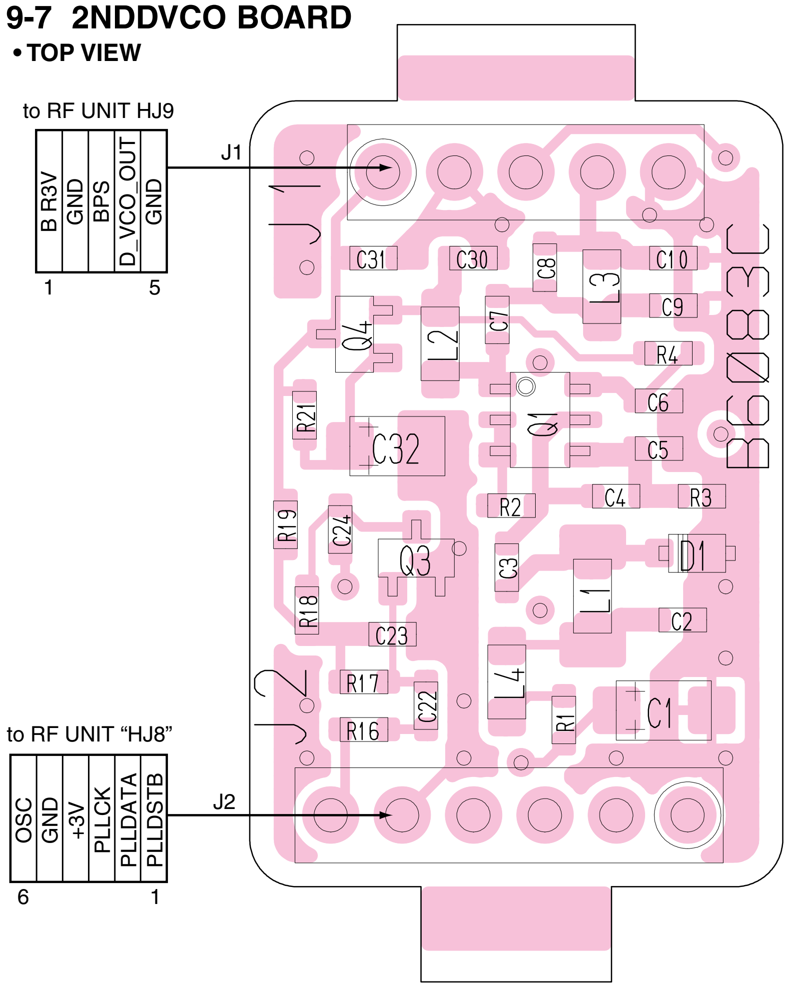
9-8 DOWNCONV BOARD
• TOP VIEW



9-5 1STBVCO BOARD
• TOP VIEW

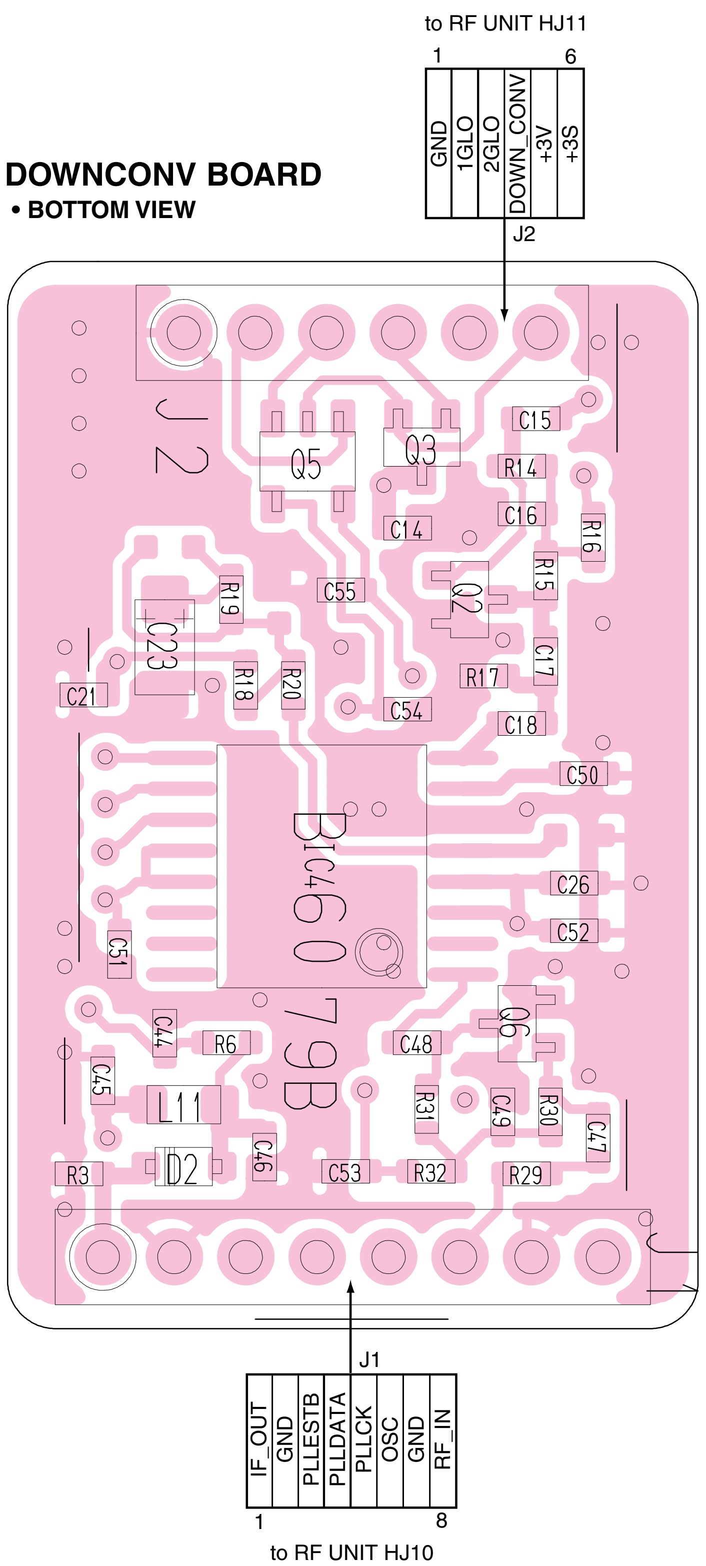


9-7 2NDDVCO BOARD
• TOP VIEW

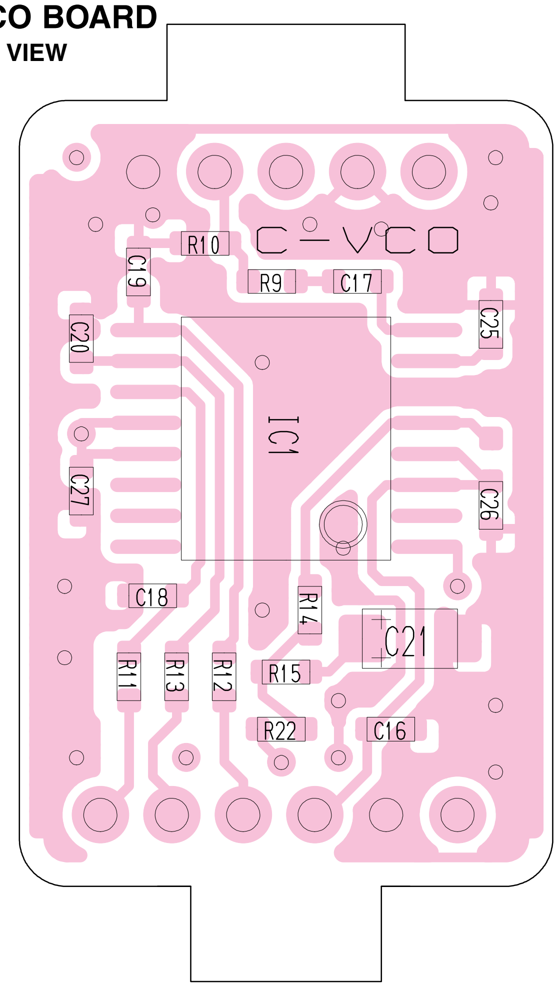


The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.

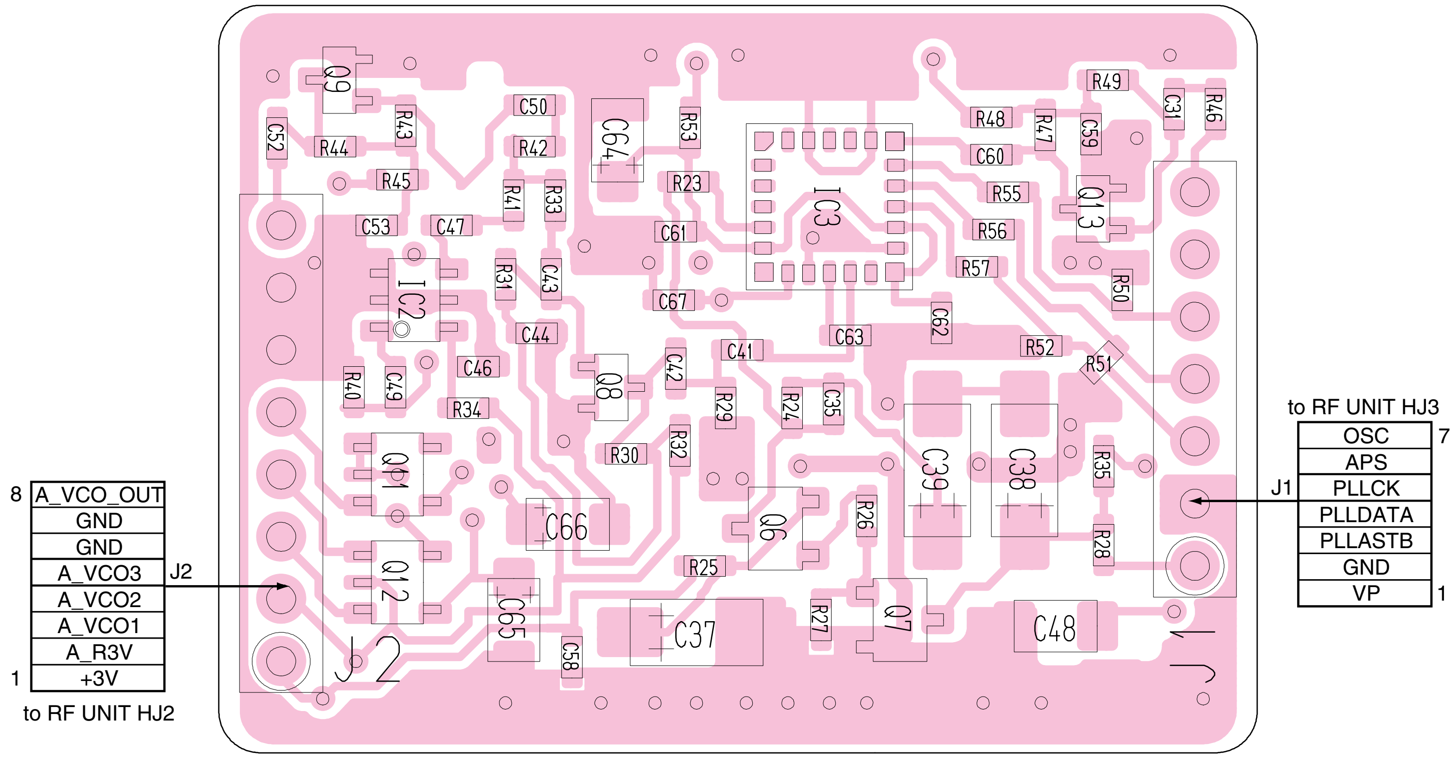
DOWNCONV BOARD
• BOTTOM VIEW



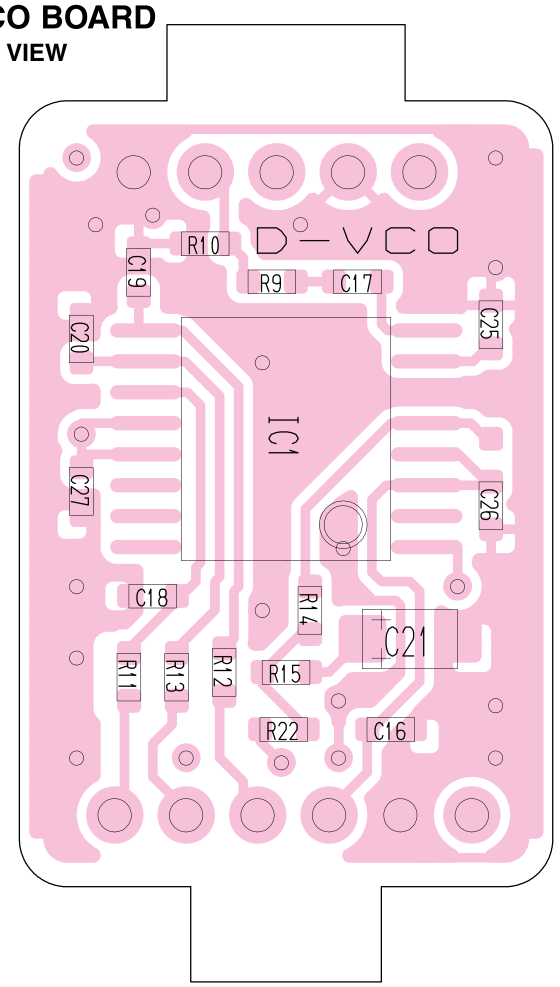
2NDCVCO BOARD
• BOTTOM VIEW



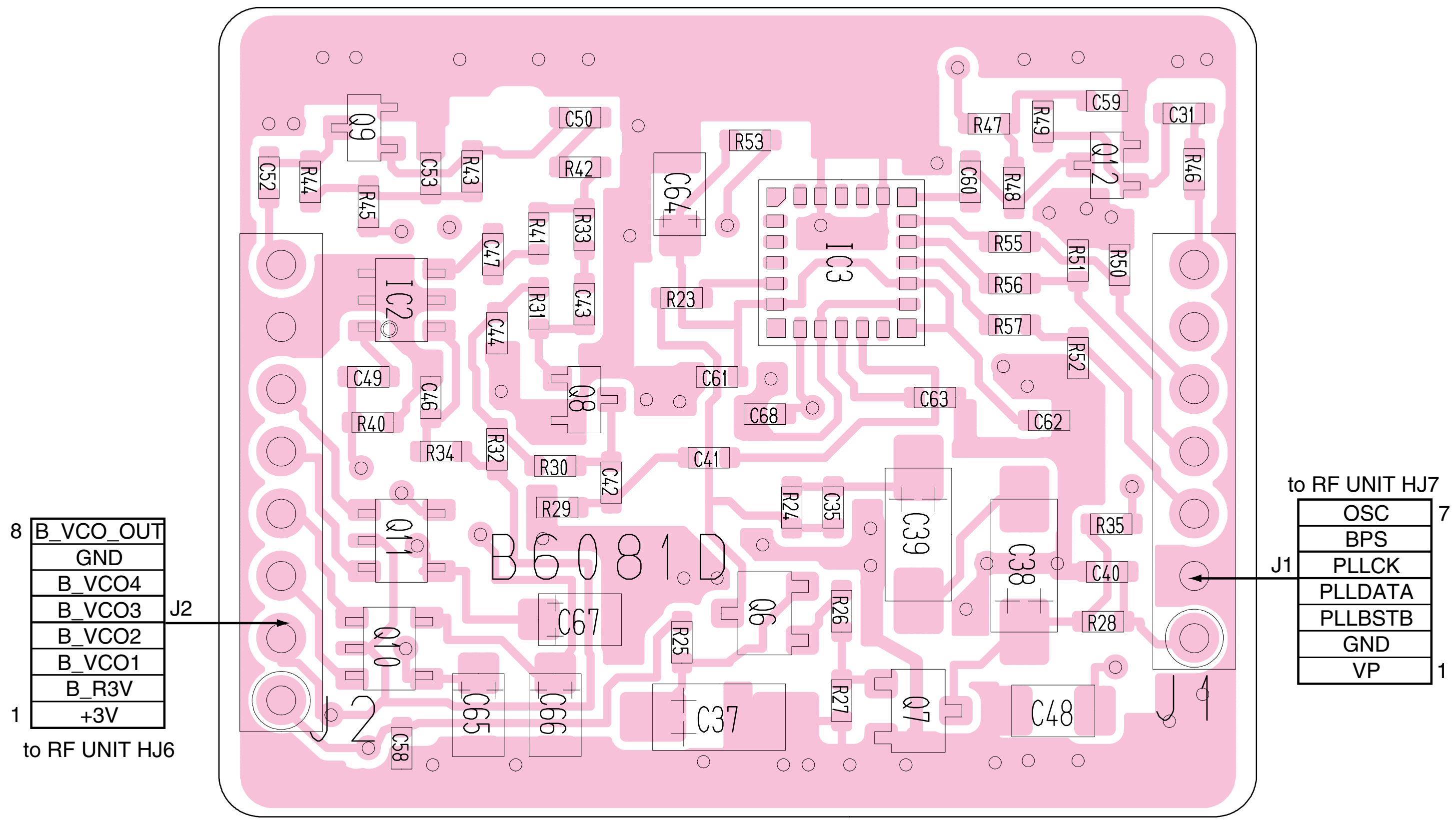
1STAVCO BOARD
• BOTTOM VIEW



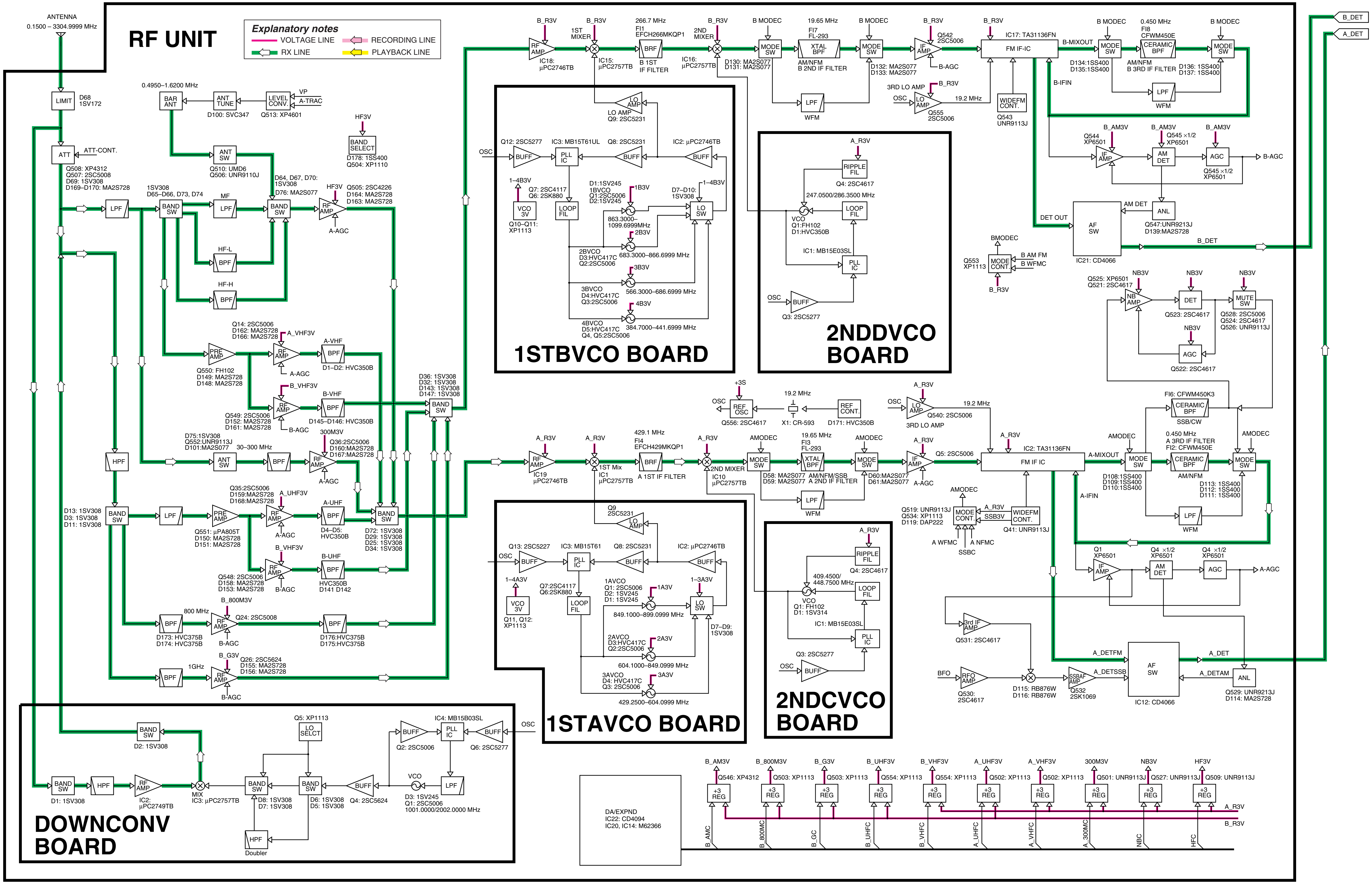
2NDDVCO BOARD
• BOTTOM VIEW

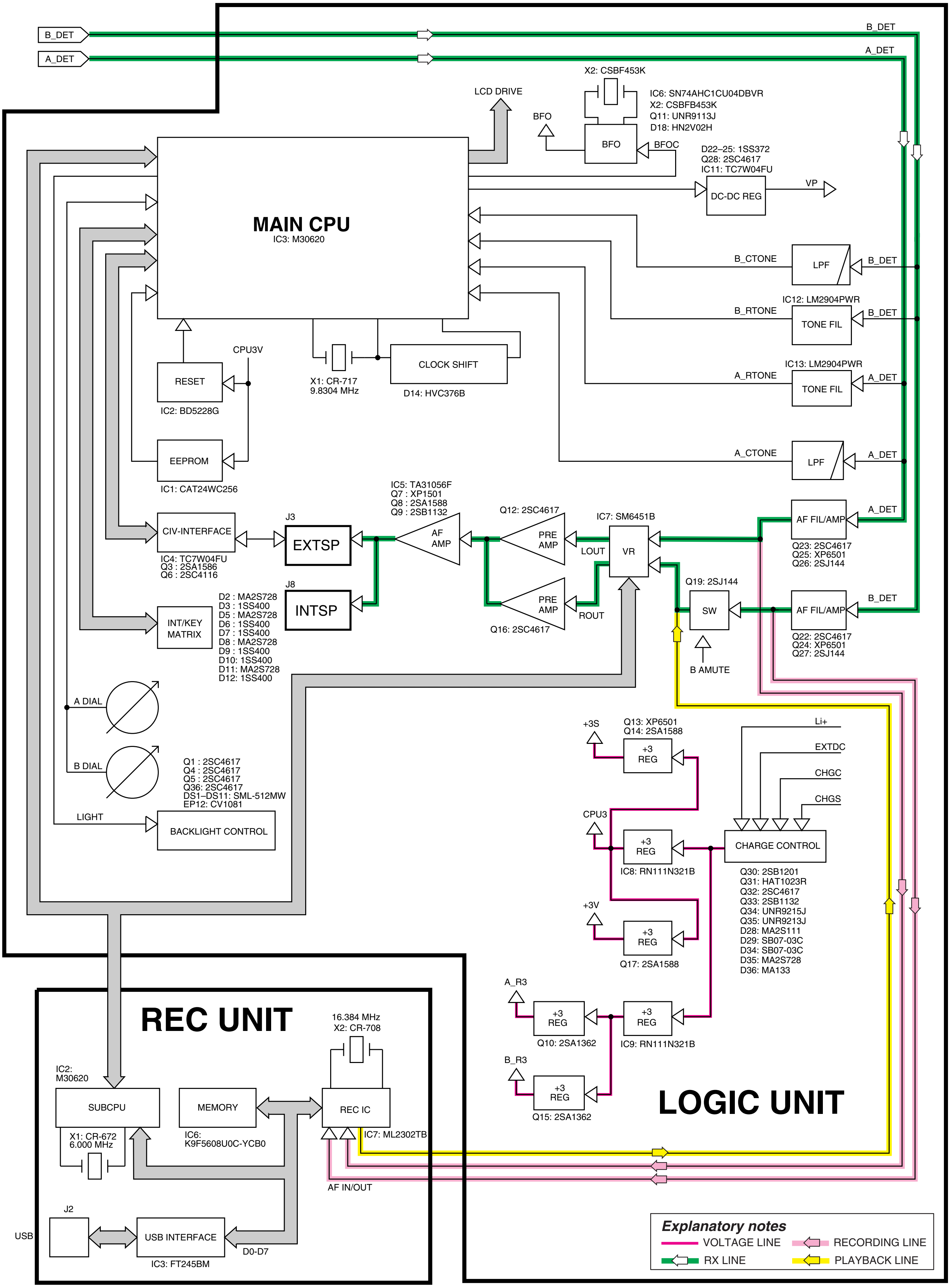


1STBVCO BOARD
• BOTTOM VIEW



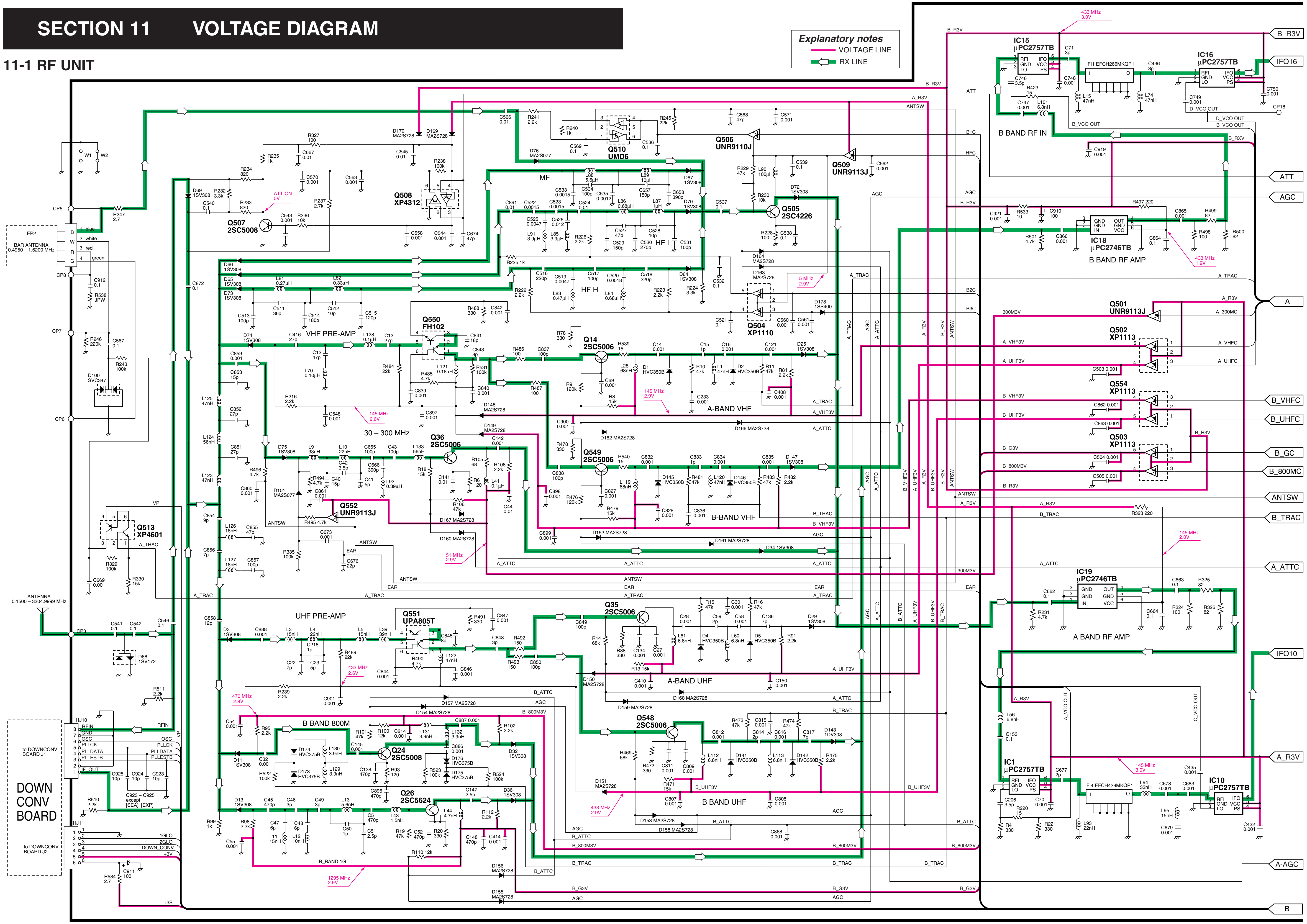
SECTION 10 BLOCK DIAGRAM

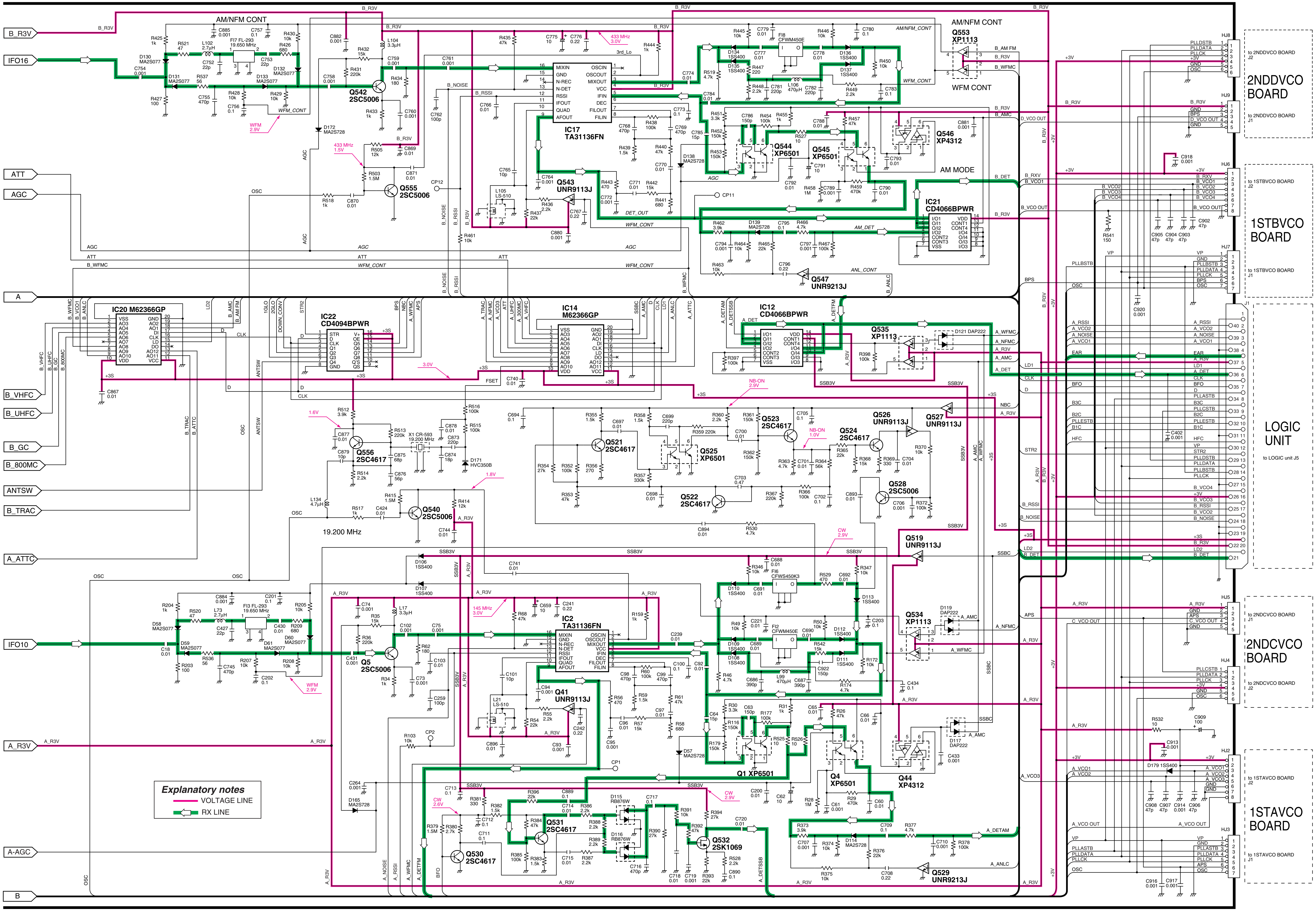



B_DET
A_DET
X2: CSBF453K
LCD DRIVE
IC6: SN74AHC1CU04DBVR
X2: CSBFB453K
Q11: UNR9113J
D18: HN2V02H
BFO
BFO
BFOC
D22–25: 1SS372
Q28: 2SC4617
IC11: TC7W04FU
VP
DC-DC REG
MAIN CPU
IC3: M30620
B_CTONE
LPF
B_DET
IC12: LM2904PWR
B_RTONE
TONE FIL
IC13: LM2904PWR
A_RTONE
TONE FIL
A_DET
A_CTONE
LPF
CPU3V
RESET
IC2: BD5228G
X1: CR-717
9.8304 MHz
CLOCK SHIFT
D14: HVC376B
EEPROM
IC1: CAT24WC256
IC5: TA31056F
Q7 : XP1501
Q8 : 2SA1588
Q9 : 2SB1132
Q12: 2SC4617
IC7: SM6451B
AF FIL/AMP
Q23: 2SC4617
Q25: XP6501
Q26: 2SJ144
J3
CIV-INTERFACE
EXTSP
AF AMP
PRE AMP
LOUT
VR
IC4: TC7W04FU
Q3 : 2SA1586
Q6 : 2SC4116
J8
INTSP
PRE AMP
ROUT
Q16: 2SC4617
Q19: 2SJ144
SW
B AMUTE
Q22: 2SC4617
Q24: XP6501
Q27: 2SJ144
INT/KEY MATRIX
D2 : MA2S728
D3 : 1SS400
D5 : MA2S728
D6 : 1SS400
D7 : 1SS400
D8 : MA2S728
D9 : 1SS400
D10: 1SS400
D11: MA2S728
D12: 1SS400
A DIAL
B DIAL
Q1 : 2SC4617
Q4 : 2SC4617
Q5 : 2SC4617
Q36: 2SC4617
DS1–DS11: SML-512MW
EP12: CV1081
LIGHT
BACKLIGHT CONTROL
+3S
Q13: XP6501
Q14: 2SA1588
+3 REG
Li+
EXTDC
CHGC
CHGS
CPU3
+3 REG
CHARGE CONTROL
IC8: RN111N321B
Q30: 2SB1201
Q31: HAT1023R
Q32: 2SC4617
Q33: 2SB1132
Q34: UNR9215J
Q35: UNR9213J
D28: MA2S111
D29: SB07-03C
D34: SB07-03C
D35: MA2S728
D36: MA133
+3V
+3 REG
Q17: 2SA1588
A_R3
+3 REG
Q10: 2SA1362
+3 REG
IC9: RN111N321B
B_R3
+3 REG
Q15: 2SA1362
LOGIC UNIT
REC UNIT
16.384 MHz
X2: CR-708
IC2:
M30620
SUBCPU
MEMORY
REC IC
X1: CR-672
6.000 MHz
IC6:
K9F5608U0C-YCB0
IC7: ML2302TB
AF IN/OUT
J2
USB
USB INTERFACE
D0-D7
IC3: FT245BM
Explanatory notes
VOLTAGE LINE
RECORDING LINE
RX LINE
PLAYBACK LINE

SECTION 11 VOLTAGE DIAGRAM

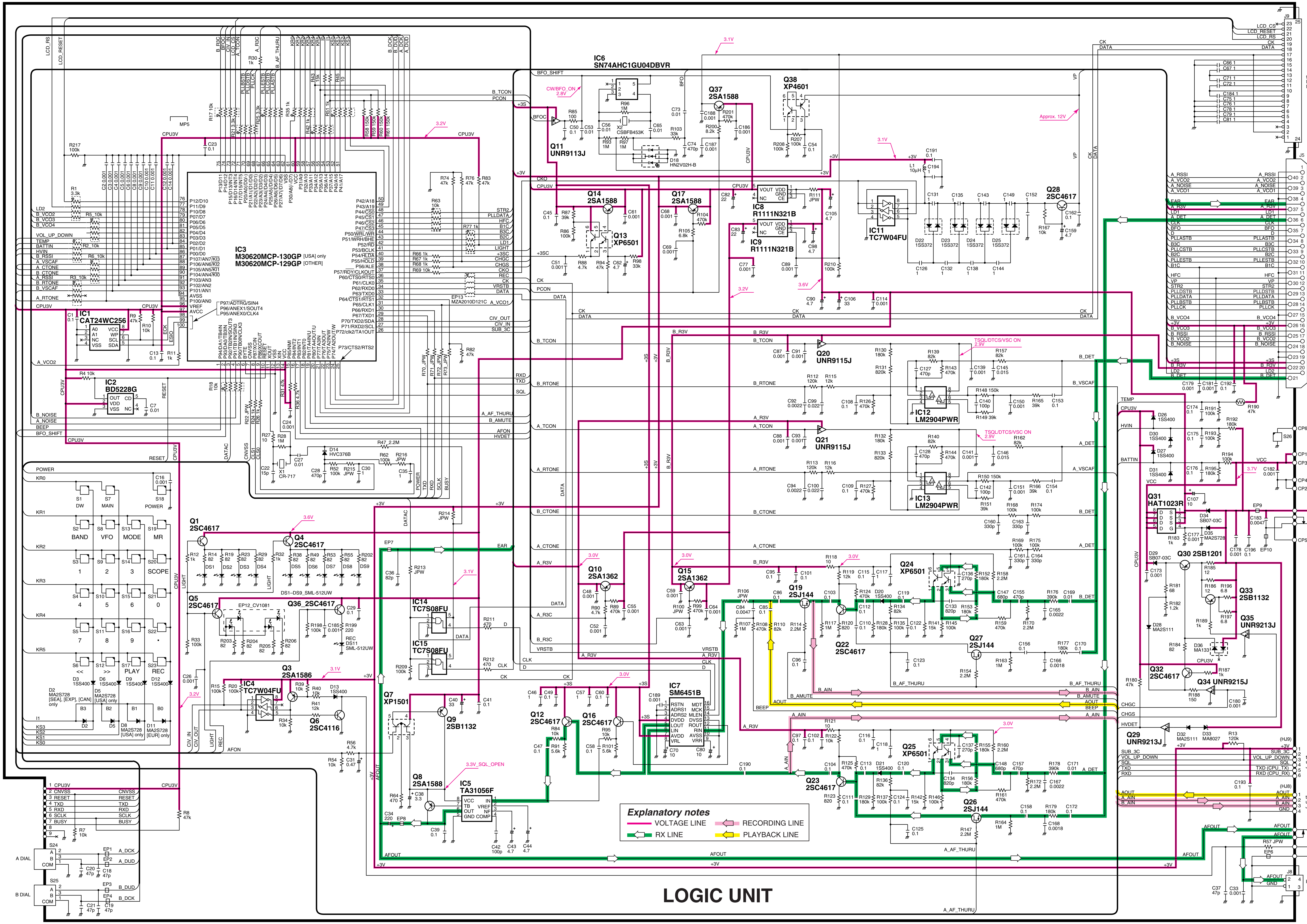
11-1 RF UNIT



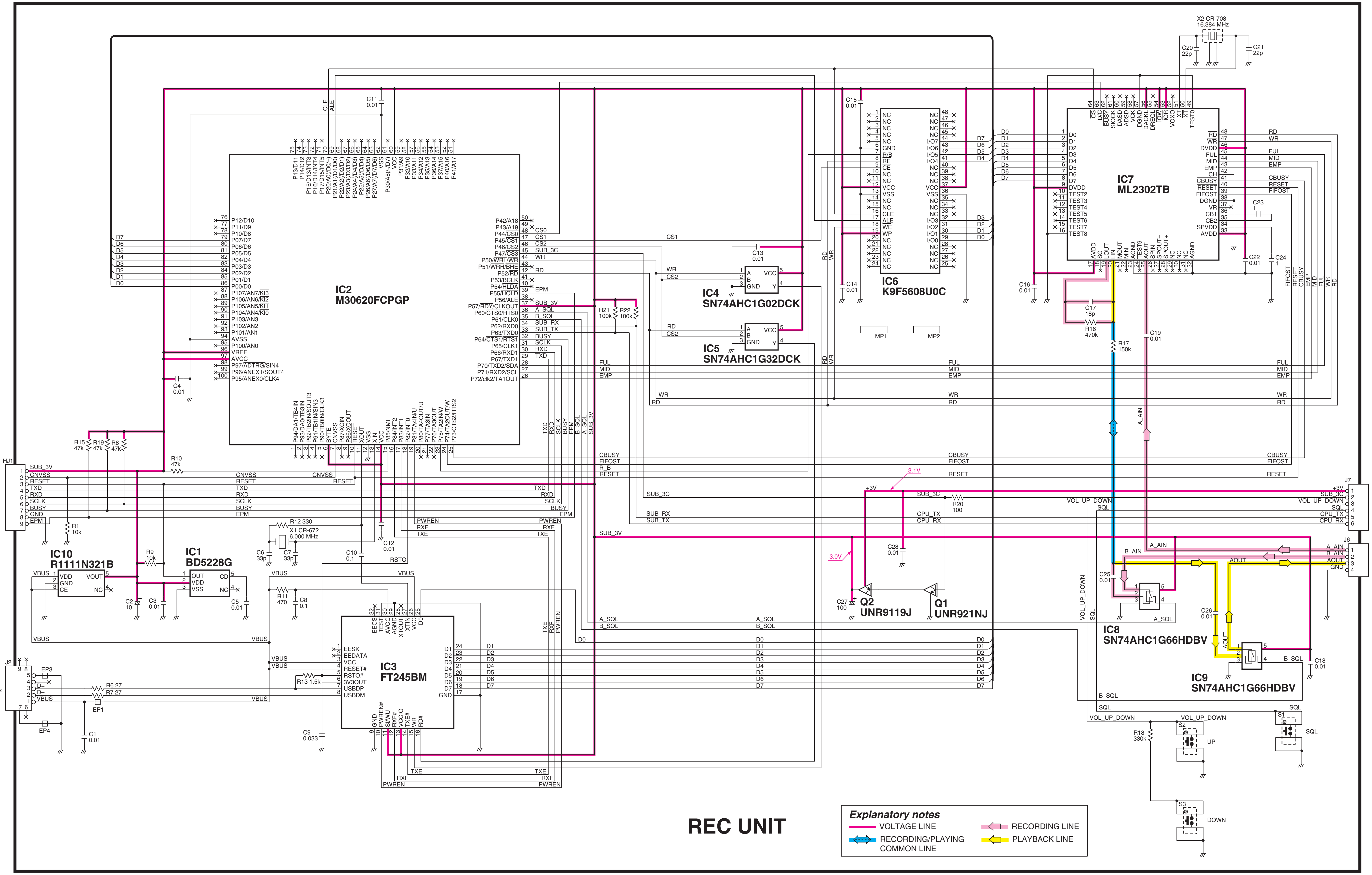


B_R3V
IFO16
ATT
AGC
A
B_VHFC
B_UHFC
B_GC
B_800MC
ANTSW
B_TRAC
A_ATTC
IFO10
A_R3V
A-AGC
B
AM/NFM CONT
WFM CONT
AM MODE
IC17 TA31136FN
IC20 M62366GP
IC22 CD4094BPWR
IC14 M62366GP
IC12 CD4066BPWR
IC21 CD4066BPWR
IC2 TA31136FN
Q542 2SC5006
Q555 2SC5006
Q543 UNR9113J
Q553 XP1113
Q544 XP6501
Q545 XP6501
Q546 XP4312
Q547 UNR9213J
Q535 XP1113
Q556 2SC4617
Q540 2SC5006
Q521 2SC4617
Q525 XP6501
Q523 2SC4617
Q522 2SC4617
Q524 2SC4617
Q526 UNR9113J
Q527 UNR9113J
Q528 2SC5006
Q519 UNR9113J
Q534 XP1113
Q5 2SC5006
Q41 UNR9113J
Q1 XP6501
Q4 XP6501
Q44 XP4312
Q531 2SC4617
Q530 2SC4617
Q532 2SK1069
Q529 UNR9213J
19.200 MHz
2NDDVCO BOARD
1STBVCO BOARD
LOGIC UNIT
to LOGIC unit J5
2NDCVCO BOARD
1STAVCO BOARD
Explanatory notes
VOLTAGE LINE
RX LINE

11-2 LOGIC UNIT

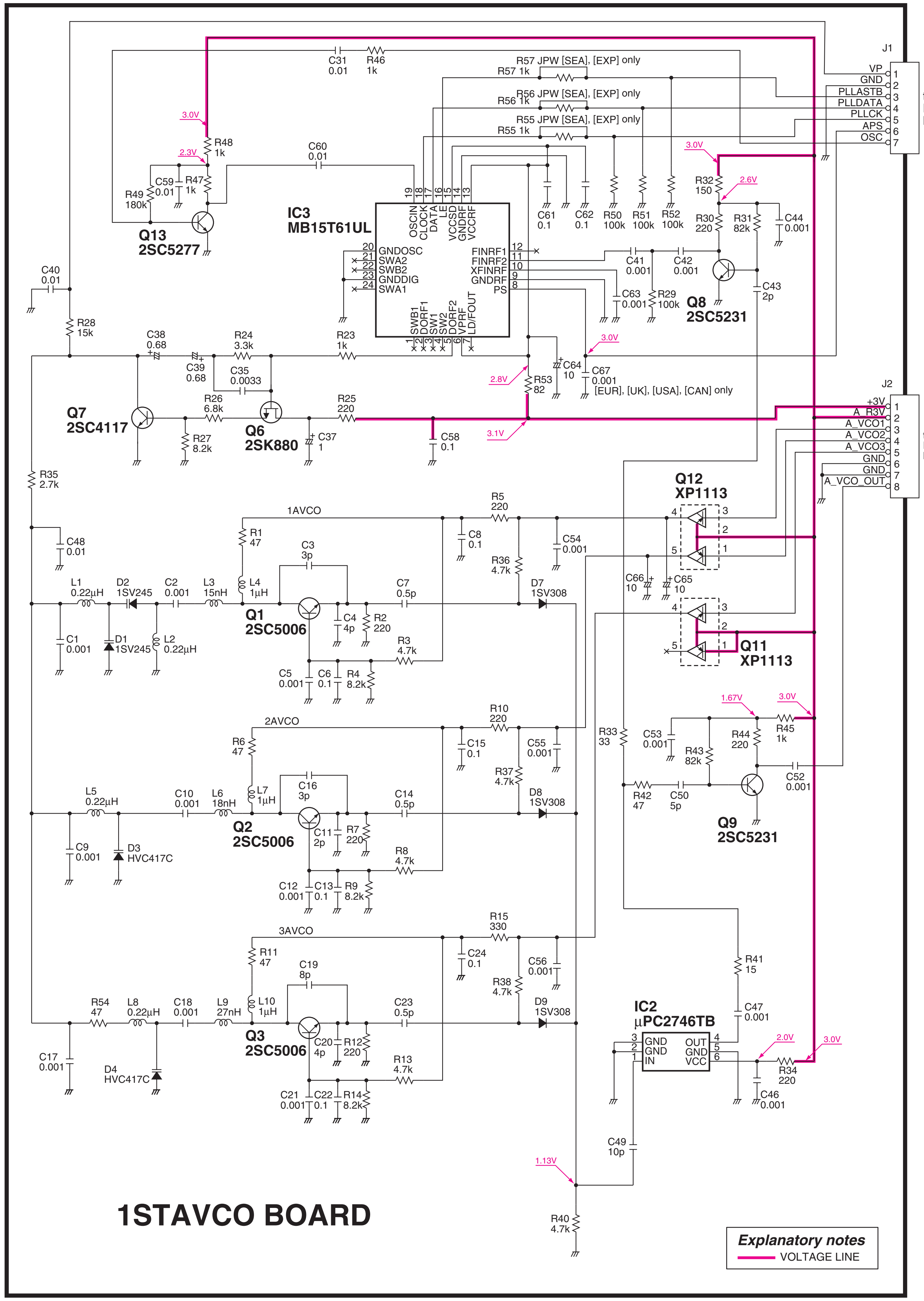


11-3 REC UNIT

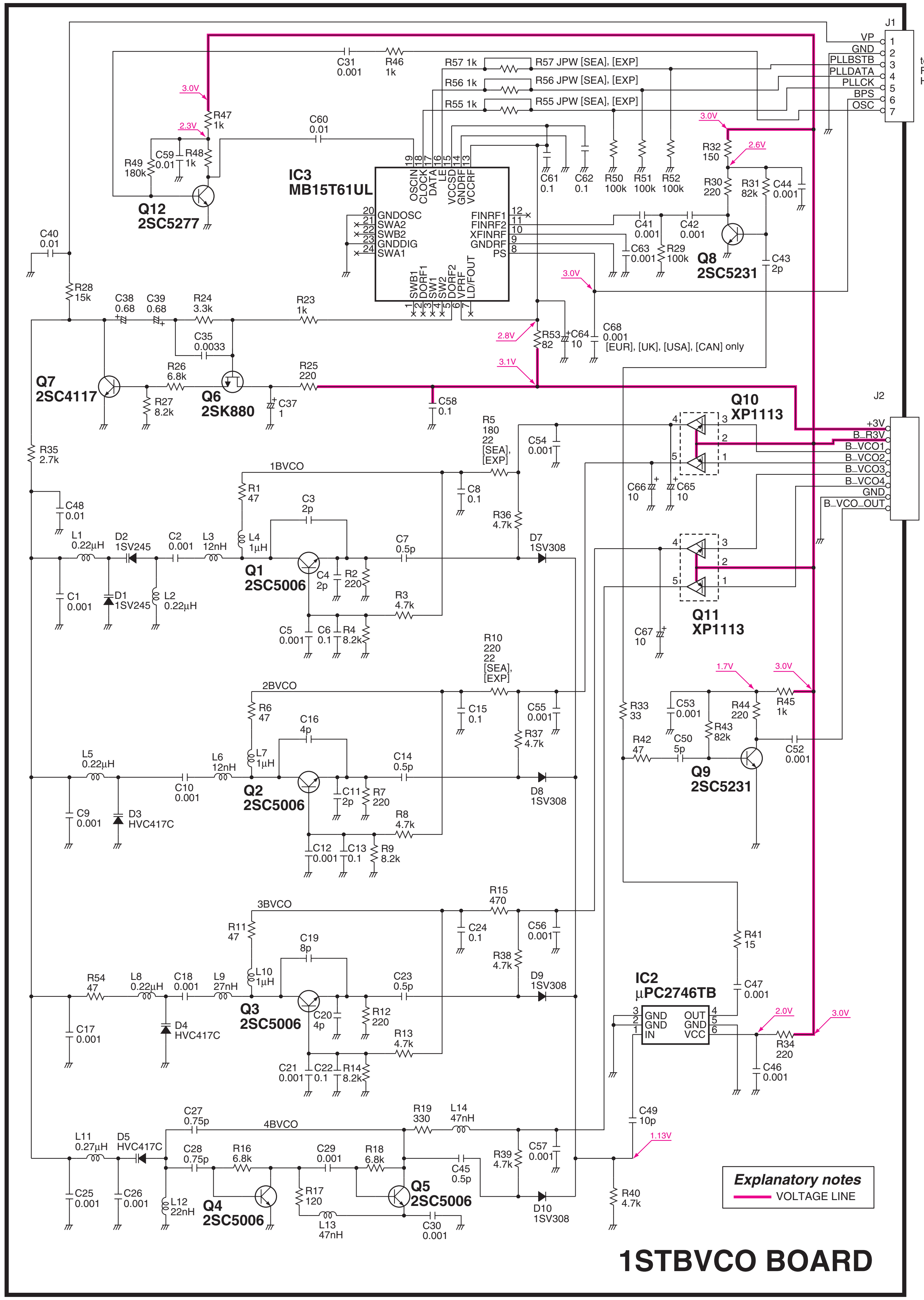


REC UNIT
IC2
M30620FCPGP
IC3
FT245BM
IC1
BD5228G
IC10
R1111N321B
IC4
SN74AHC1G02DCK
IC5
SN74AHC1G32DCK
IC6
K9F5608U0C
IC7
ML2302TB
IC8
SN74AHC1G66HDBV
IC9
SN74AHC1G66HDBV
Q1
UNR921NJ
Q2
UNR9119J
X1 CR-672
6.000 MHz
X2 CR-708
16.384 MHz
HJ1
J2
from/to
USB jack
J7
to
LOGIC unit
HJ9
J6
to
LOGIC unit
HJ8
S1
SQL
S2
UP
S3
DOWN
3.1V
3.0V
Explanatory notes
VOLTAGE LINE
RECORDING/PLAYING
COMMON LINE
RECORDING LINE
PLAYBACK LINE

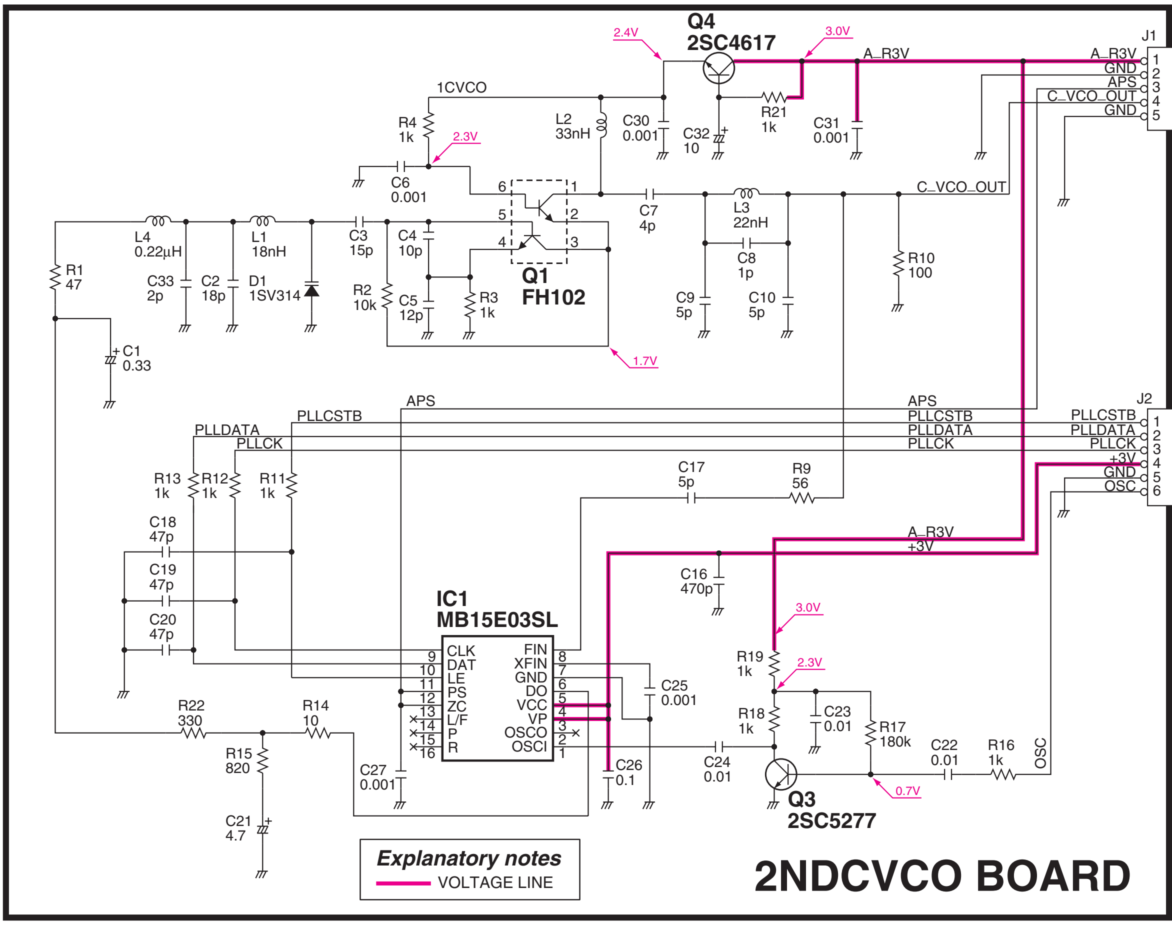
11-4 1STAVCO BOARD



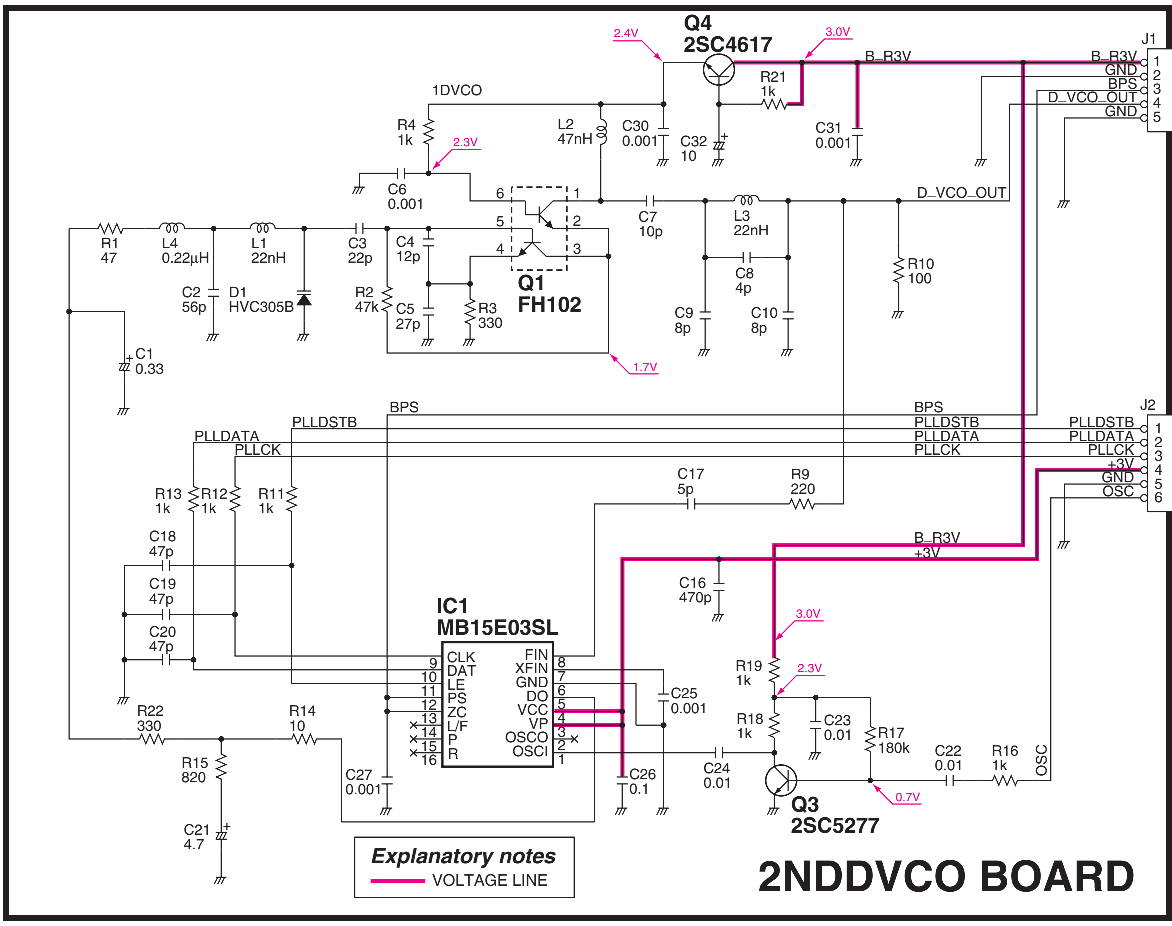
11-5 1STBVCO BOARD



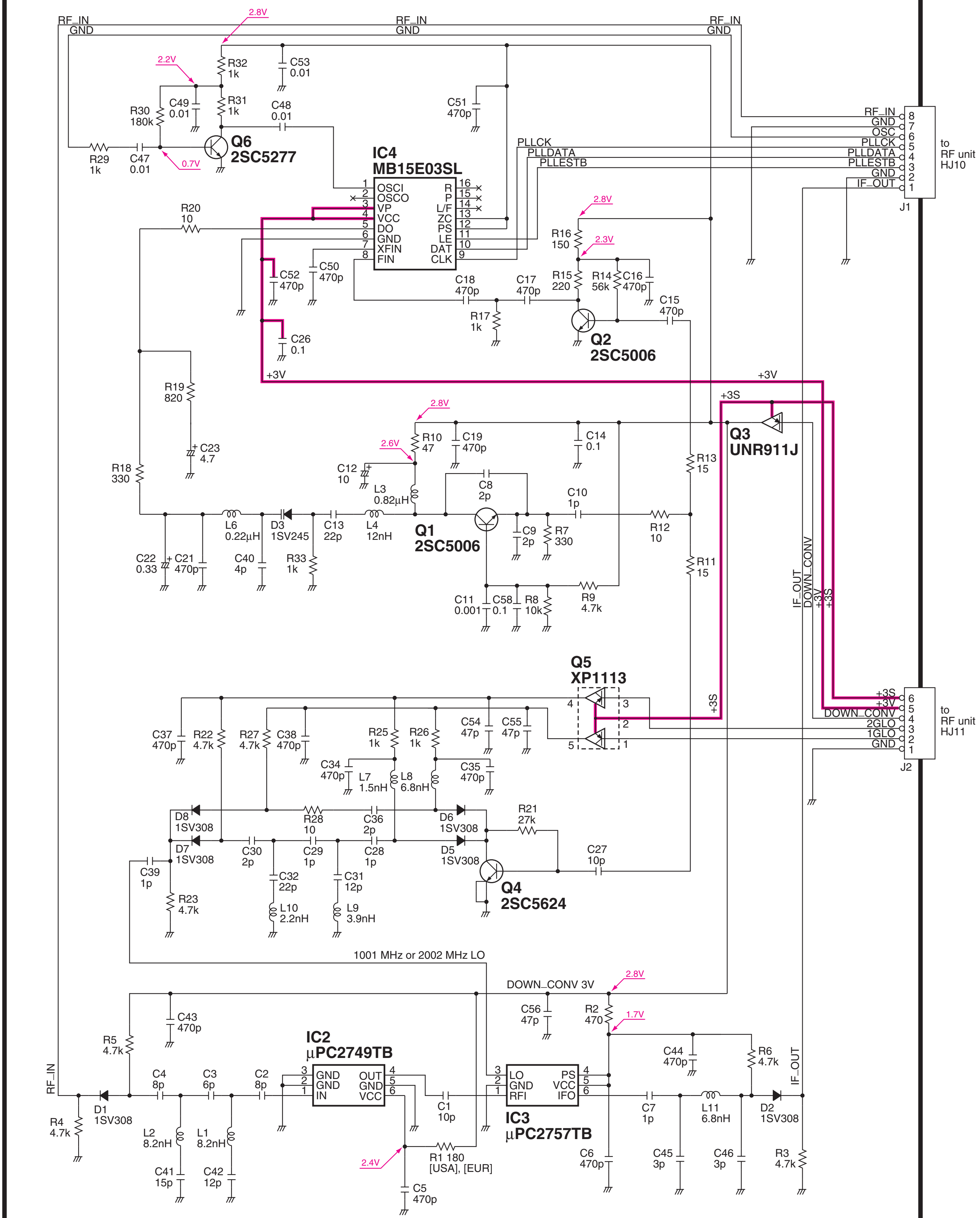
11-6 2NDCVCO BOARD



11-7 2NDDVCO BOARD



11-8 DOWNCONV BOARD



DOWNCONV BOARD

Explanatory notes

VOLTAGE LINE

SECTION 12 BC-156 DESKTOP CHAGER INFORMATION

12-1 DISASSEMBLY INFORMATION

[CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8930062600	2708 holder	1
MP2	8110007620	2505 cover	1
MP3	8810009990	Screw PH BT M3 X 8 ZK	8
MP4	8930039620	Stand/leg cushion (A)	2
MP5	8930051010	2308 terminal holder	1
MP6	8930051020	2308 A-terminal Y490	3
MP7	8930051030	2308 B-terminal	3
MP8	8010019600	2505 case (D)	1

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6450000410	Connector HEC0470-01-630	1
F1	5210000040	Fuse FGB 2A (FGB0 125V)	1
F2	5220000020	Fuse holder S-N5051	1
F3	5220000020	Fuse holder S-N5051	1
WS1	8600036620	OTHER EX2308 PD1* J04MA	1

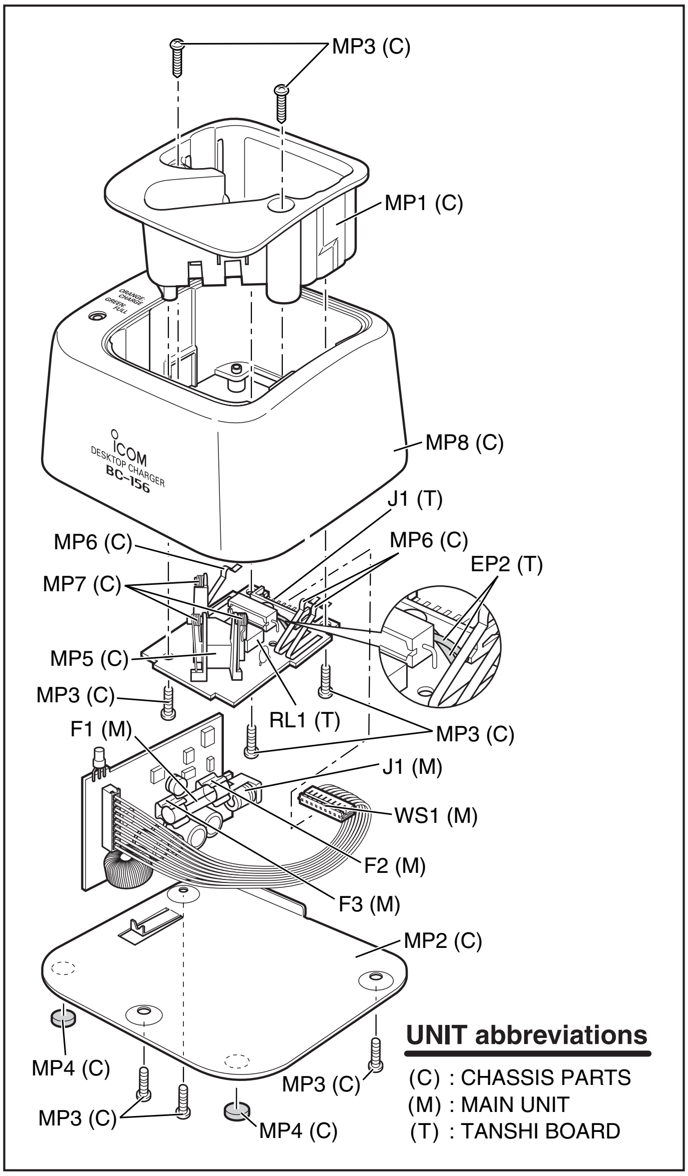
[TANSHI BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6510003570	Connector S09B-EH-S	1
EP2	9001602001	IRRAX 0.7 (d) L=10mm	2
RL1	6330001630	Relay A-5W-K	1

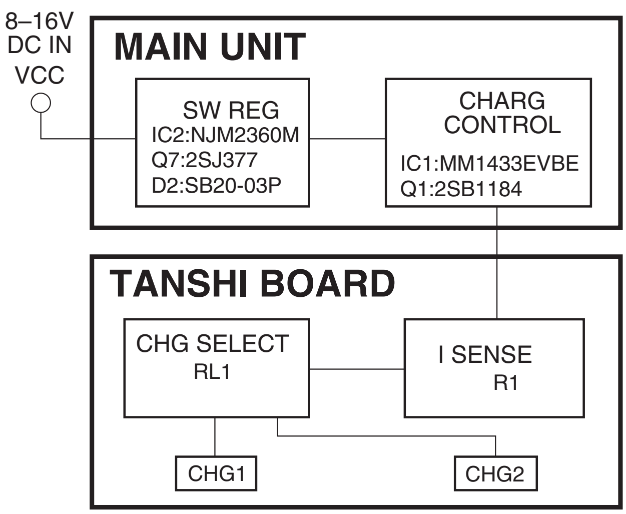
[ACC ACCESSORIES]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
EP1	800003420	BC-123A (LS-11033-ADT) w/box SKT [EUR]	1
	800003430	BC-123E (LS-11030-ADT) w/box SKT [UK]	1

Screw abbreviations BT: Self-tapping PH: Pan head ZK: Black

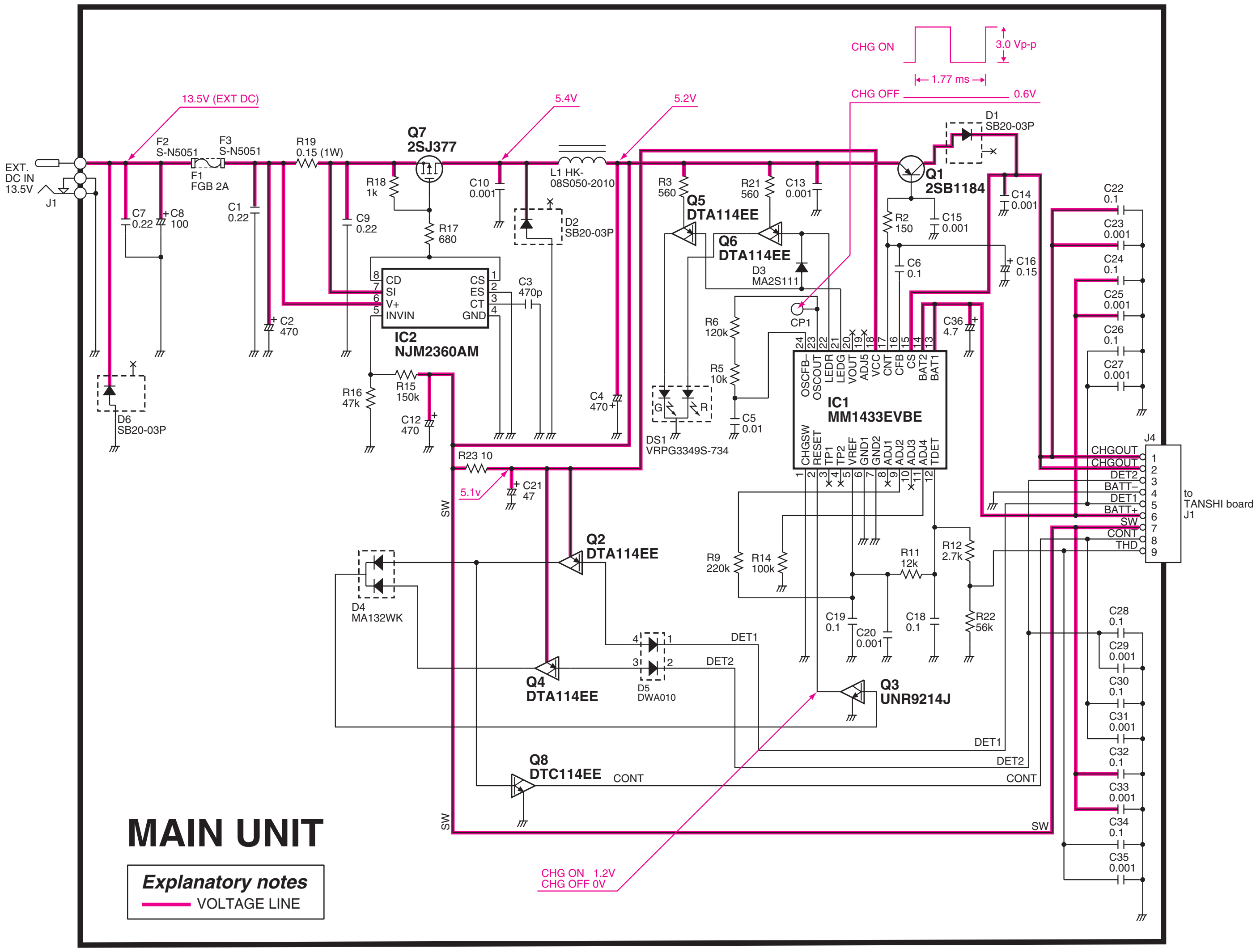


12-2 BC-156 BLOCK DIAGRAM

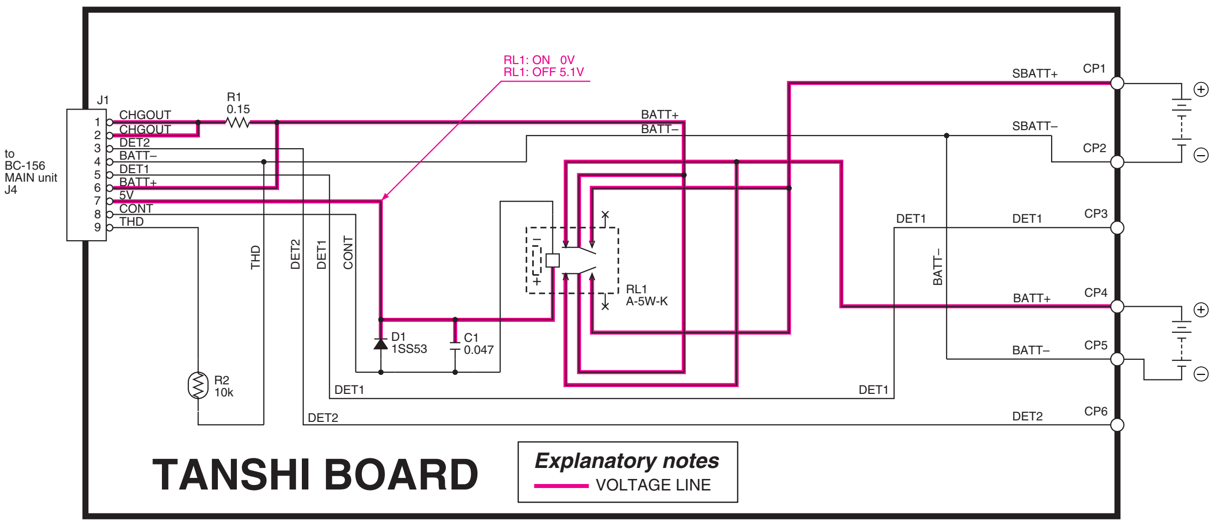


12-3 BC-156 VOLTAGE DIAGRAM

• MAIN UNIT

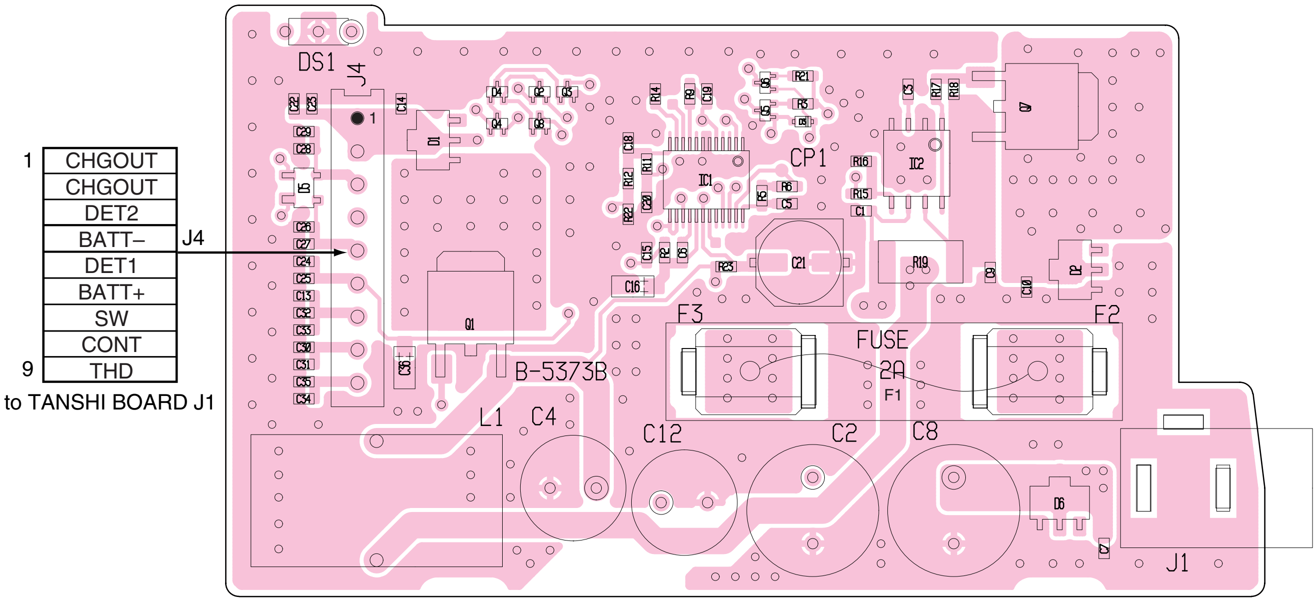


• TANSHI BOARD

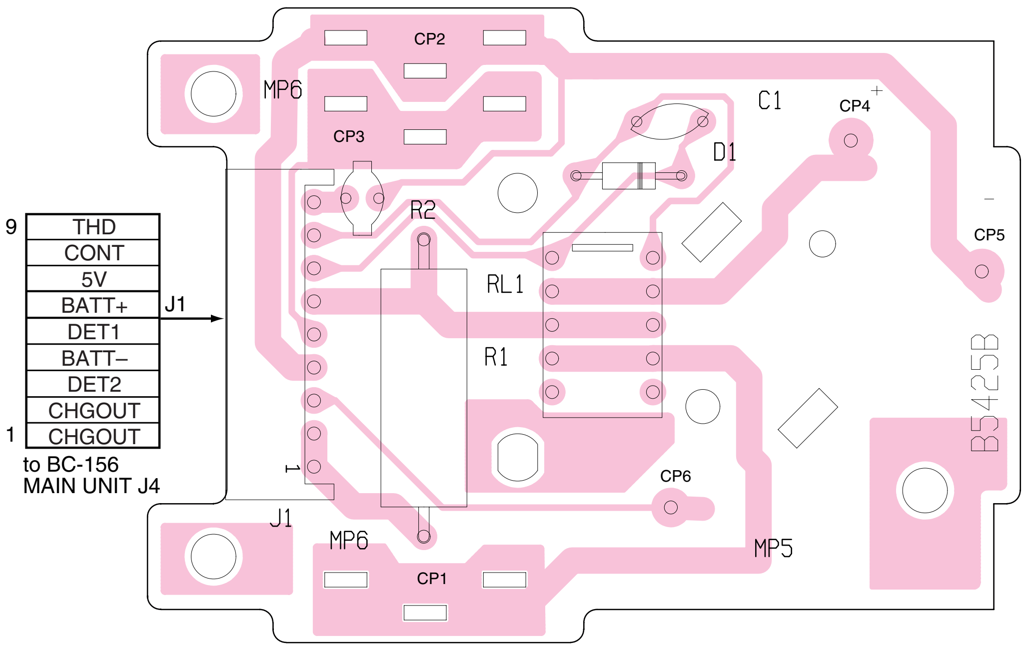


12-4 BC-156 BOARD LAYOUTS

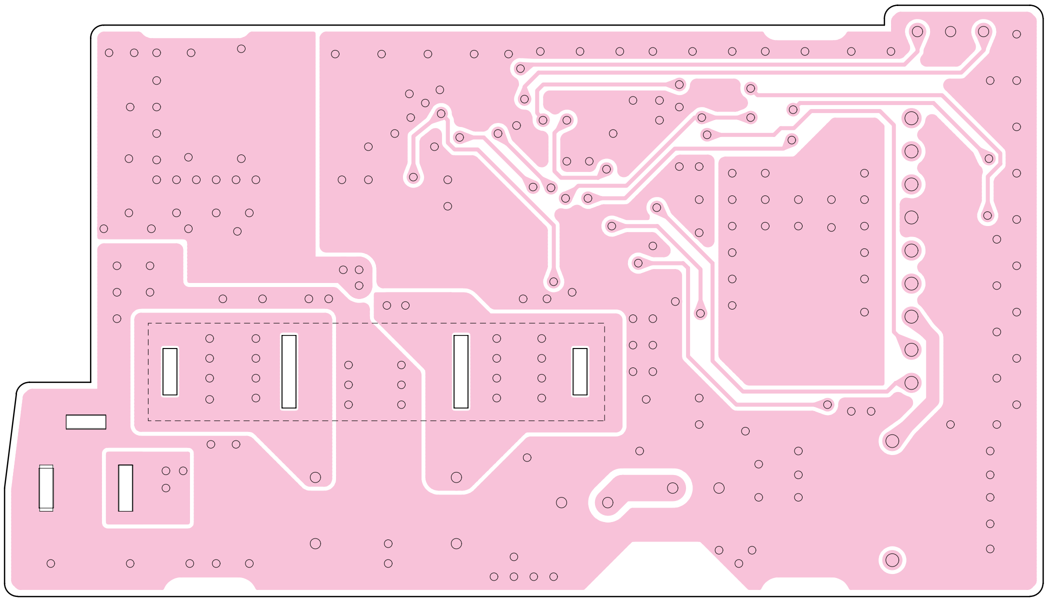
• MAIN UNIT (TOP VIEW)



• TANSHI BOARD (TOP VIEW)



• **MAIN UNIT (BOTTOM VIEW)**



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S-14104MZ-C1